Lonza

# ACTIVITY REPORT 2009

# Key Facts and Figures

## Full-year results in a snapshot

The 2009 business year was characterized by lower demand across all businesses, reflecting consumer and industry responses to the changed economic environment in 2009.

Sales of CHF 2 690 million (CHF 2 937 million in 2008), with EBIT of CHF 380 million before special charges[1] (CHF 441 million in 2008).

Stable EBITDA margins (24.5 %) despite more volatile environment.

Comprehensive package of measures, including cost reductions of CHF 60–80 million within two years, triggering special charges of CHF 141 million.

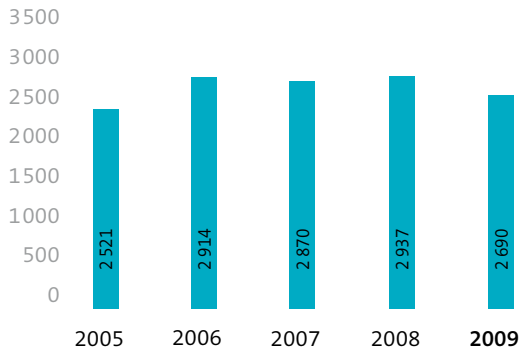
Despite the difficult environment, Lonza's debt gearing was reduced to 49 % (76 % in 2008).

The Board of Directors is proposing a cash dividend of CHF 1.75 per share.

| Key figures Lonza<br>million CHF | 2008 | 2009<br>before special charges | 2009<br>after special charges[1] | Change<br>before special charges | Change<br>after special charges[1] |
|---|---|---|---|---|---|
| Sales | 2 937 | 2 690 | 2 690 | (8.4) | (8.4) |
| EBITDA | 691 | 658 | 601 | (4.8) | (13.0) |
| EBIT | 441 | 380 | 239 | (13.8) | (45.8) |
| Profit for the period | 419 | 279 | 159 | (33.4) | (62.1) |
| Cash flow before change in net working capital | 530 | 472 | 468 | (10.9) | (11.7) |
| Capital expenditures (net of customer financing) | 420 | 511 | 511 | 21.7 | 21.7 |
| Net debt | 1 469 | 1 166 | 1 166 | (20.6) | (20.6) |
| Net debt-equity ratio | 0.76 | 0.46 | 0.49 | | |
| Total equity | 1 934 | 2 509 | 2 389 | 29.7 | 23.5 |

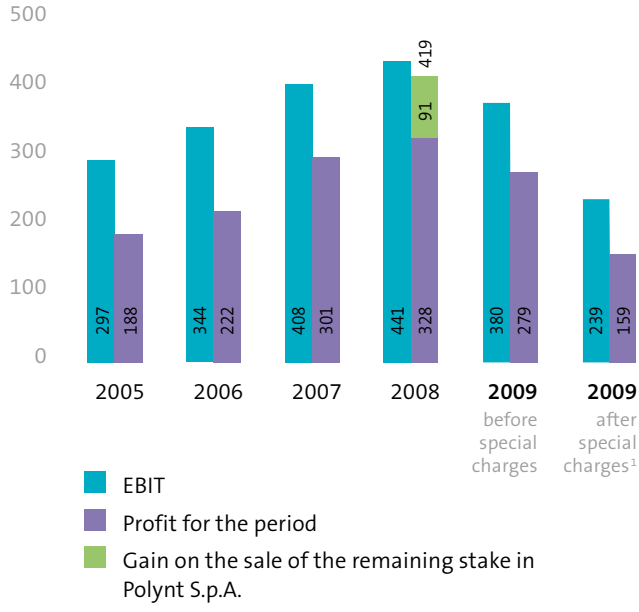
## Sales progression

million CHF




## EBIT and profit for the period

million CHF

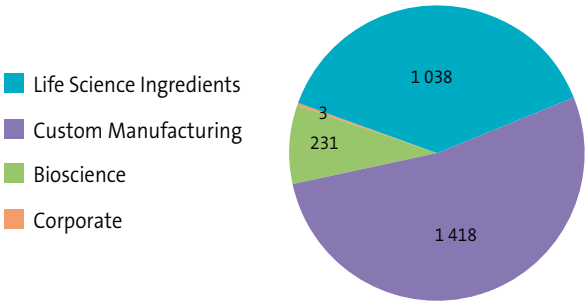



[1] **Special charges:**

| | |
|---|---|
| – Impairment of assets | (83) |
| – Write-down of inventories | (22) |
| – Restructuring expenses | (25) |
| – Environmental expenses | (11) |
| **– Total special charges** | **(141)** |

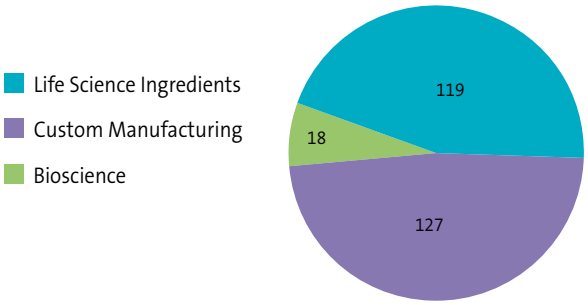
## Sales by operating segments 2009

million CHF




## EBIT by operating segments 2009

million CHF



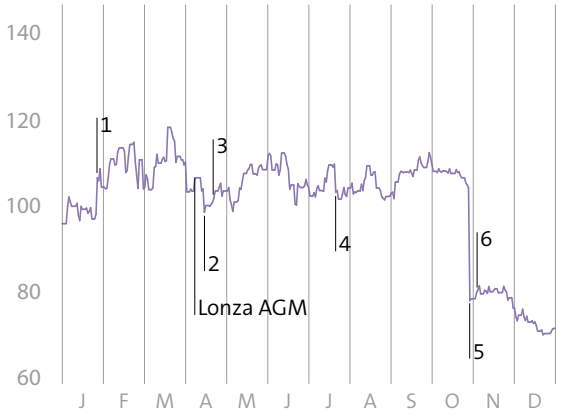

| Profitability % | 2008 | 2009 before special charges | 2009 after special charges[1] |
|---|---|---|---|
| EBITDA | 23.5 | 24.5 | 22.3 |
| EBIT | 15.0 | 14.1 | 8.9 |
| RONOA | 13.8 | 10.7 | 6.7 |

| Share information CHF | | 2008 | 2009 before special charges | 2009 after special charges[1] |
|---|---|---|---|---|
| Basic earnings per share | | 8.81 | 5.55 | 3.19 |
| Diluted earnings per share | | 8.15 | 5.51 | 3.17 |
| Dividend payout ratio | % | 25[2] | 33 | 57 |

| | 2008 | 2009 |
|---|---|---|
| Ordinary dividend paid / declared per share | 1.75 | 1.75 |
| Book value per share | 40.47 | 45.74 |
| Number of shares (par value CHF 1.00) | 50 450 000 | 52 920 140 |
| Share price (high / low) | 158.30 / 83.95 | 120.10 / 71.50 |
| Share price at year-end | 97.55 | 73.00 |
| Market capitalization (31 December) | 4 921 | 3 863 |

[2] Excluding gain on the sale of the remaining stake in Polynt S.p.A. in 2008

## Share price development 2009




1 Full-year 2008 results
2 Dividend payment
3 First-quarter business update
4 Half-year 2009 results
5 Third-quarter business update
6 Lonza 2009 investor event

Lonza AGM: Lonza Annual General Meeting

### Lonza in a nutshell

Lonza is a leading supplier to the pharmaceutical, healthcare and life-science industry. Our products and services span customers' needs from research to final product manufacture. Lonza is headquartered in Basel, Switzerland, and is listed on the SIX Swiss Exchange.

# LONZA ACTIVITY REPORT 2009



Besides the Activity Report, Lonza also publishes an Annual Report, which includes the Financial Report, the Remuneration Report and Corporate Governance. Both publications are accessible online at www.lonza.com and are also available in German. The English version prevails. In this report, "Lonza" and "the Group" refer to the whole group of Lonza companies, "Lonza Group Ltd" refers to Lonza Holding.

**Dear Customers, Employees, Shareholders and Friends of Lonza,**

It is our pleasure to present you with our Activity Report 2009. This report provides a summary of Lonza's financials, strategy and global business activities. It also gives insight into our culture, vision and objectives.

The 2009 business year was a difficult one, in which we missed our targets. The year was characterized by lower demand across all businesses. This was reflected in order reductions driven by clinical results, affecting large-scale biopharmaceutical projects in Custom Manufacturing, and recession-related lower demand in Life Science Ingredients.

Lonza reacted to the volatile business environment by implementing a re-engineering project. The main countermeasures adopted are the streamlining of Lonza's structures, reduction of fixed costs, and improvement of our product and project pipelines. Announced at the end of October 2009, the measures aim to reduce fixed costs by CHF 60-80 million over a period of 18-24 months. The re-engineering project also entails a reduction in staff of approximately 450 employees, which corresponds to the normal attrition rate.

The cornerstones of the re-engineering project are:
- Increasing flexibility in biopharmaceutical manufacturing to meet our customers' needs for more small and mid-size capacities and multiple-site sourcing.
- Structural changes in chemical manufacturing: strengthening of our platform in Asia and closure of the sites in Conshohocken (Riverside), PA (USA) and Shawinigan (CA). This step opens up an opportunity to enter the market for mature regulated products, a new market activity for Lonza.
- Merging chemical R&D organizations into one platform, with a stronger emphasis on Asia.
- Further increasing resources in sales and business development and aligning the entire organization to customer projects.

Despite the difficult environment, we continued in 2009 to lay the basis for future growth, as many significant milestones have been achieved:
- Further build-out of the large scale mammalian biopharmaceutical facility in Singapore, with targeted utilization rate of 60 % at start-up in 2011
- Start-up of the new custom manufacturing facilities in Nansha (CN) (chemical APIs) and the 2 000-liter microbial manufacturing facility (biological APIs) in Hopkinton, MA (USA)
- Development of activities in India with an acquisition (Symbiosis)
- Groundbreaking for a new Cell Therapy facility in Singapore
- Opening of the new Microbial Control formulations plant in Nanjing (CN)
- Strengthening of our technology platform through the acquisition of Algonomics, a contract research organization supporting the Development Services business unit of Lonza Custom Manufacturing
- All businesses have an increasing pipeline of promising product developments
- Strategic partnership with Teva to become a leading global provider of biosimilars
- Introduction of the Lonza Promoter Score across all businesses, enabling customer satisfaction to be measured as reliably as financial performance

In 2009, we also intensified our efforts in Corporate Social Responsibility by participating in the United Nations Global Compact. Lonza wholeheartedly supports the ten principles of the Global Compact, with respect to human rights, labor, environment and anti-corruption, and is committed to the ongoing integration of the Global Compact principles into its strategy, culture, day-to-day operations and reporting. In this Activity Report, you will find articles focusing on the environment and anti-corruption. "From industrial wasteland to business park" describes the transformation of our former production site in Waldshut (Germany) into a modern business park, with two innovative projects in the field of renewable energy. "Safely built plants that consider the environment" describes our engineering activities in China and the top priority given

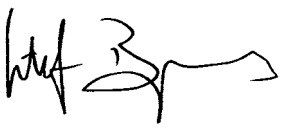
to safety and environmental standards. The anti-corruption topic is addressed in "A dual system to guard against corruption", which focuses on Lonza's training measures to raise employees' awareness about anti-corruption laws.

For Lonza, corporate social responsibility is not just a technical term, but an active commitment that is essential to all our employees. It is our commitment to act in accordance with all legal environmental and social requirements, while pursuing our economic goals.

Although the business environment remains unstable, we continue to be optimistic about our ability to deal with the situation. Lonza's life sciences growth strategy will continue to deliver long-term growth. The effect of the re-engineering project will result in significant generation of free operational cash flow in 2010. Capital expenditure will be reduced from the original target of CHF 500 million for 2010, to below CHF 400 million, with a similar target for 2011. This will further strengthen cash flow generation and the balance sheet structure. The increased financial flexibility will open up specific expansion possibilities in our life-science-focused value chain.

We remain fully committed to our vision and long-term strategy. We continue to invest significantly in science and technology to create new business opportunities. We work with passion to transform life science into new possibilities for our customers, whom we thank for their continued trust. We would especially like to thank our employees for all their commitment and dedication in the past year, and our shareholders for their continued support.

Rolf Soiron
Chairman of the Board of Directors



Stefan Borgas
Chief Executive Officer

### Aligned with the markets

Today, several of our business units serve more than one market, and some of our markets are served by more than one Lonza business unit. To meet the needs of our diverse customer base more effectively in future, communication with our customers – through product brochures, catalogs and advertisements – will be organized according to seven markets, which are described in this article and defined as follows: PharmaBiotech, BioResearch, Nutrition, MaterialsScience, Agriculture, MicrobialControl and PersonalCare.

However, the subsequent chapters of this Activity Report follow the company's official reporting structure, which is presented in the Company Profile (pages 14/15). This is organized in three divisions: Life Science Ingredients, Custom Manufacturing and Bioscience, and their respective business units.

To give an idea of our business strategy, we present here the seven markets we serve by letting our business people describe the opportunities and challenges they encounter in these markets and Lonza's specific product and technology offering for each of them.

## 1 PharmaBiotech

Observing the global pharmaceutical market's continuing growth, one is struck by some remarkable trends that highlight new directions as well as new opportunities for Lonza.

On the one hand, traditional Western markets have been growing at a slower pace due to a diminishing innovation rate, coupled with the prevalence of aging blockbuster drugs. On the other hand, emerging markets such as India and China have been growing rapidly and are poised for significant gains in the coming years. This combination has set the stage for a considerable increase in the demand for small-molecule generics. Lonza has anticipated this shifting market landscape through expansion of its network into China and a clear intent to further extend its reach into India.

The market for biotechnology-based therapeutics continues to grow at a substantial pace in traditional markets. Lonza has expanded its biotech asset base and technology portfolio, both organically and through acquisition, to effectively match this growth. Lonza is further leveraging its market-leading biotech expertise to lead the way in the drive for biosimilars, which are expected to provide global, cost-effective access to biologics products. Lonza is also blazing the trail for newer biotechnologies, such as cell therapy, which show considerable promise and growth potential.

The dynamic pharma and biotech markets are continuing to evolve and Lonza is striving to align itself proactively with this evolution as an opportunity to increase its market share by offering innovative services, technologies and business models.

*Joe Pont, Head of Marketing and Key Account Management, Lonza Custom Manufacturing*




## 2 BioResearch

The BioResearch market encompasses the areas of cell and molecular biology, from basic discovery to applied research, with different purchasing behaviors depending on the use, the nature of the product, and the organization.

The most significant areas of basic research currently focus on protein and gene expression, metabolism, toxicology, cell therapy, and regenerative medicine. For human disease research, the most highly funded areas of research include cancer, cardiovascular, neurological, respiratory, and metabolic diseases.

Lonza Research Solutions has prospects and customers in academic and governmental institutions, as well as biotech and pharmaceutical organizations. We offer over 2000 different catalog research products and services, including human and animal primary cells, cell culture media and sera, Nucleofection™ devices and reagents, electrophoresis instruments and reagents, bioassays, and tools for gene expression analysis.

Looking ahead, key product growth areas expected in this market include stem cells and related media, serum-free media for cell lines and primary cells, and cell-based assays for measuring cell health and function. In the current "fail early, fail fast" world of pharmaceutical development, finding robust ways to provide rapid and consistent information at the ADMET (Adsorption, Distribution, Metabolism, Excretion and Toxicity) stage is necessary for critical "go or no go" decision-making. Lonza Research Solutions plans a further expansion of the product and service portfolio to address these market needs.

*Stephanie Nickles, Lonza Research Solutions,*
*Head of Product Management, Cell Biology*

## 3 Nutrition

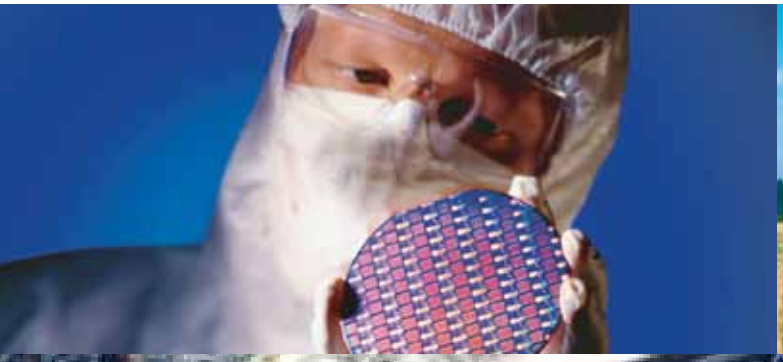
Lonza's Nutrition business is based on a solid foundation of key support and added value offered to our customers in the nutrition market. Our nutrition ingredients are backed by scientific evidence, and we provide regulatory and marketing support as well as high standards of quality control and quality assurance. We offer branded ingredients, with clear benefits and key messages, reinforced by our customers, distributors, and agents around the world.

Our expertise extends into many applications in both animal and human nutrition, including food and feed fortification, dietary supplements, functional food and beverages, infant formulas, and pharmaceuticals. The following areas of health and well-being are covered by our products: cardiovascular, gastrointestinal and immune health, sports nutrition, brain function, weight management, reproductive performance and energy metabolism. They are also used to improve yield benefits in animals.

Our L-carnitine products include Carnipure™, Carniking™, and Carnichrome™. We also offer ResistAid™, FiberAid™, and LaraFeed™, made from larch arabinogalactan, as well as DHAid™, a vegetarian source of omega-3 DHA (docosahexaenoic acid), and vitamin B3 in the form of niacin and niacinamide.

We will continue to expand our offerings and services through innovation, process development and acquisitions, in order to meet the market needs of the future.

*Roman Quinter, Head of Nutrition Ingredients business unit*




## 4 MaterialsScience

Our High Performance Materials (HPM) business might appear to be a foreign object in a life-sciences driven company like Lonza. However, our HPM business and life sciences have much more in common than they have differences, making HPM a good and logical strategic fit for Lonza.

The material-science markets we serve with our HPM business comprise high-tech industries such as aerospace, electronics, automotive, telecommunications and construction. All of these industries are increasingly regulated. The approval and qualification lead times for products and applications can run to years, just as for new drugs. Due to the intense competition and excellent growth opportunities, these industries are highly innovative; they protect intellectual property on a worldwide basis and require very stringent quality standards in production. Lastly, our long-term relationships with our customers help us stay ahead of the pack, with new products and applications – like our Custom Manufacturing business.

Our cyanate ester Primaset™ PT-30S is used to make air ducts for the Airbus. The aerospace industry also uses Lonzacure™ resin hardeners for structural composite elements of the latest Airbus and Boeing planes. Our cyanate ester resins Primaset™ BADCY and Primaset™ BA230S possess excellent electrical and mechanical properties for rigid circuit boards in high-end computers and communications electronics, especially for high-temperature operation. Pyromellitic dianhydride (PMDA) from Liyang (CN) is sold to customers around the world for production of polyimides for flexible circuit boards. Lonza recently supplied Lonzacure™ DETDA 80 for protective coatings to the prestigious Chinese high-speed rail project from Beijing to Shanghai.

*Ken McMahon, Head of Performance Intermediates business unit*

## 5 Agriculture

Lonza's high reputation as a trustworthy European-based supplier of exclusive fine chemicals is the precondition for our close cooperation with all the major innovative agrochemical companies throughout the world.

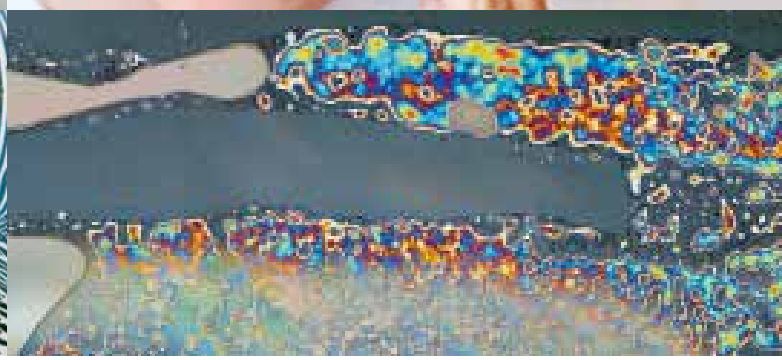
Our success in custom manufacturing of technologically complex intermediates for the agrochemical industry is based on our core technologies as well as our motivation to improve existing processes continuously.

Lonza also has an excellent reputation in the agrochemical industry for the manufacture of agrochemical end-products such as highly active herbicides, operating a dedicated production plant in Visp (Switzerland) with a highly motivated workforce, with long experience in maintaining the highest standards of contamination prevention. The continuous expansion of these capacities and the steadily growing diversity of our technology offering, such as phosgenation, carbonylation and nanofiltration, are highly respected by our customers.

Our world-leading specific molluscicide Meta™ metaldehyde, which is produced at our site in Visp and sold worldwide, adds further expertise in the agrochemical field. A dedicated and motivated team is committed to the continuing development of new solutions, providing benefits to farmers all over the world.

*Michael Helwig, Head of Custom Manufacturing Industrial Specialties, Lonza Life Science Ingredients*



## 6 MicrobialControl

In 2009, some of the top stories in the global media included: the H1N1 influenza A virus and the threat of a global pandemic, the increased number of hospital-acquired staph infections, such as MRSA (a strain of the Staphylococcus aureus) bacteria, and the increasing concerns about food safety. These developments have added to a growing demand for products that are safe and effective in killing viruses and preventing their spread.

The Hygiene team within Lonza's Microbial Control business is dedicated to finding solutions for these concerns. Through our innovation in formulations, active ingredients and product development, we offer a broad range of solutions, including ready-to-use non-alcohol-based hand disinfectants, hard-surface cleaning and disinfection products, and efficacy testing to support our portfolio of products as well as our customers' products. Currently, Lonza has six formulations in the USA and nine in Europe that have been approved as effective against the H1N1 influenza A virus, with approval pending in other countries.

We continually expand our markets through technological innovations – both acquired and internally developed – and protect our intellectual property by registering and / or patenting our products in each of the countries where they are sold.

In addition to the hygiene industry, we also provide solutions (products, testing and regulatory services) for other areas of the microbial control market, such as materials protection, preservation and water treatment. All areas of the business share a common focus on providing sustainable solutions for healthy homes and workplaces.

*Jeanne Thoma, Head of Microbial Control business unit*

## 7 PersonalCare

Personal care is a key example of how Lonza touches a market across business sectors. Lonza has a long history in personal care, beginning with leadership in preservatives, expanding to specialty actives and ingredients, and finally to testing solutions.

The personal care market consists of manufacturers of consumer products for beauty and personal hygiene. Lonza customers include the large brands that make consumer products for skin, hair and oral care, as well as the development and testing companies that support them.

Industry trends include increasing regulatory standards and growing consumer concern for the health, safety and environmental impact of the products they use. Lonza offers a broad portfolio to assist customers in meeting these standards, including Life Science Tools and Services for efficacy and analytical testing, the microCompass™ system for bioburden testing, cell models to replace animal testing, and a range of cell-based assays and tools.

In a growing push for natural products, manufacturers look for innovations such as Lonza's Geogard™ series of preservatives, as well as natural polysaccharides like LaraCare™ and SeaPure™ agarose, which, along with other ECOCERT ingredients, provide formulators with new options for natural skin care.

By supplying ingredients and the tools and expertise to test formulations, Lonza is fully integrated with both manufacturers and consumers in this growing industry.

*Mary Riley, Head of Marketing, Molecular Biology*

From left to right:
Lukas Utiger, COO Life Science Ingredients division;
Uwe H. Böhlke, Chief Officer Human Resources / Corporate Services;
Toralf Haag, Chief Financial Officer;

Anja Fiedler, COO Bioscience division;
Stefan Borgas, Chief Executive Officer;
Stephan Kutzer, COO Custom Manufacturing division.

Responsible for
operational excellence

## COMPANY OVERVIEW



« Work at Lonza sites is performed with a great sense of responsibility towards our customers. Edna Choi, Research Engineer II at our site in Walkersville, MD (USA), and the Upstream Process team she leads within the Cell Therapy Contract Manufacturing R&D group are operational excellence champions, designing new media systems and cell-culture processes aimed at increasing scale, while reducing the complexity and cost of our customers' processes. »


# Company profile

**Lonza is a global company serving the needs of the life-science industry. Over a century ago, Lonza began as a small Swiss electricity company, making a few chemicals on the banks of the river Lonza in the Valais region of the Swiss Alps. Now, more than 110 years later, Lonza is a leading supplier to the pharmaceutical, healthcare, and life-science industries. We offer over 4 000 products and services to more than 15 000 customers worldwide. From 1897 to the present day, the company has had an enterprising character, adapting its offerings and services to the needs of customers and to changing technologies. Throughout our history, we have maintained a strong culture of performance, results, and dependability that is valued by all of our diverse customers.**

## Our vision and mission

We believe that science and technology should be used to improve the quality of life.

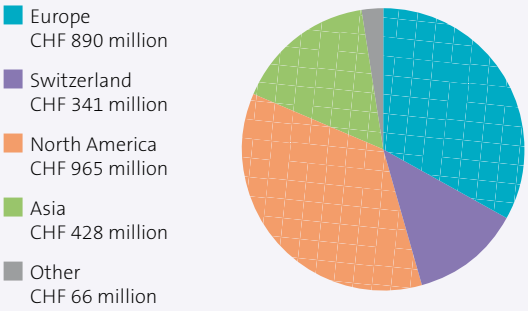
We work with passion, using advanced technologies, to transform life science into new possibilities for our customers.

## Organized around customers

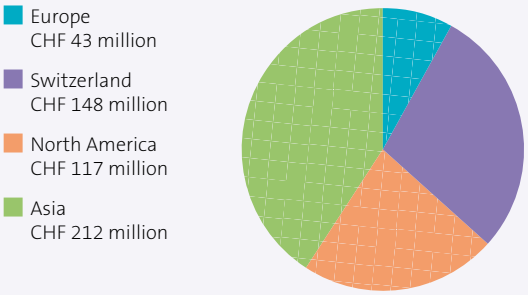
To provide optimal support to our customers, we are organized in businesses that focus on specific sets of customers and their exact needs. We operate as three divisions: Life Science Ingredients, Custom Manufacturing, and Bioscience.

Our customers are located across the globe. To ensure the close connection necessary to serve their needs to best effect, we have production and R&D activities at 26 sites around the world. In addition, we have a global network of sales offices, with representatives who are close to our customers, speak their language and understand their needs.

### Sales third-party by geographical location of customers




### Capital expenditures including customer financing




## Products and services for our customers

Our strategy is to target the life-science industry with two fundamental technologies: chemistry and biotechnology. Using these two technologies, we offer both products and custom manufacturing services to the pharmaceutical, biotech, and life-science industries.

In our **Life Science Ingredients** division, we offer products used in nutrition, microbial control, as well as in selected industrial markets. In these businesses, we produce the ingredients that make our customers' products effective. Our customers are manufacturers of consumer and health products, distributors, formulators, and service companies. Our ingredients range from the active biocides that make hospital disinfectants effective, to the nutritional ingredients that support improved health, and include complex chemical intermediates for the agricultural industry.

In our **Custom Manufacturing** division, we are a partner to our pharmaceutical and biopharmaceutical customers for their manufacturing needs. Using a variety of technologies, we make the ingredients that are ultimately used in many critical drugs, treating patients in areas such as cardiovascular diseases, cancer, neurological and infectious diseases. Our product capabilities include both small and large molecules, resulting from technology processes such as advanced chemical synthesis, peptide synthesis, microbial fermentation and mammalian cell culture.

In our **Bioscience** division, we make the tools that life-science customers use to discover, develop, make and test therapeutics. Our customers are worldwide, in pharmaceutical and biotechnology companies, as well as in academic and government research organizations. Our products range from cell culture and molecular biology tools for life-science research to media used in the production of therapeutics and tests for microbial detection. We also offer custom manufacturing services to cell therapy companies.

# Shaping Lonza's future

Innovation has been the backbone of the over 110-year success story of Lonza. To secure future growth, Lonza formed the LIFT initiative (Lonza Innovation for Future Technology) in early 2008. In a roundtable discussion, the LIFT team members explained how the initiative is developing and the opportunities and challenges they encounter in their daily work.

**What was the background to the creation of the LIFT organization in 2008?**

**Oleg Werbitzky**
In 2008, Lonza had many specific R&D activities in each of the business sectors, covering daily R&D responsibilities and sector-specific innovation; these activities were typically focused on a short- to mid-term perspective. In order to address radical innovation topics and boost Lonza's growth in the next decade, it was decided to start LIFT as a corporate innovation initiative. This approach would allow us to tackle highly promising innovation projects, with a different view on the timing and potential uncertainties related to specific projects.

**Allison Haitz**
LIFT also enhances innovation by recognizing opportunities that may not be a major focus of any one sector, but are of high value through the leveraging of Lonza's experience across several sectors. We can take higher risks in LIFT than are palatable at sector level.

**LIFT was launched with a focus on long-term projects, with five to eight years expected between initial ideas and business implementation. Is this still the main focus?**

**Allison Haitz**
Yes, I would say even a five- to ten-year horizon, but in order to do this we are looking at macro trends that go beyond that.

From left to right
Birgit Nelsen-Salz, Corinne Turpin, Oleg Werbitzky,
Hans-Peter Meyer, Allison Haitz

**Birgit Nelsen-Salz**
The duration of a project is not an evaluation criterion, but rather a consequence of the criteria. We are looking for projects with high business potential, and these usually need up to five or more years to be realized. But we are keen on project ideas with high business potential that can be implemented faster!

**LIFT was set up to drive innovation projects in both Lonza's chemistry and biotechnology platforms. Are there different approaches for the two platforms?**

**Oleg Werbitzky**
Chemistry and biotechnology are the two essential and equally important technology platforms for Lonza. However, from the point of view of the modern life-science industry, a strict differentiation between the two sciences becomes difficult in many cases and therefore appears somewhat traditional. LIFT is strongly focused on future objectives, and here a strong integration of both sciences will be needed.

**Allison Haitz**
Indeed we recognize that it is likely that the blurring and fusion of scientific disciplines not only opens up new perspectives, but is likely to gain momentum, leading to some very exciting opportunities in the future. Although we talk broadly about chemistry and biotechnology, if we just think "life sciences" in the broadest terms, this avoids constraining our thinking.

**Corinne Turpin**
And besides chemistry and biotechnology, new platforms encompassing technologies as yet unknown to Lonza might also be worth considering in the creation of new long-term business opportunities.

# Shaping Lonza's future

**As a corporate initiative covering projects related to all three divisions of Lonza, LIFT needs close collaboration with the different R&D groups. What does daily work-sharing look like?**

**Hans-Peter Meyer**
Yes, there is indeed a need for close collaboration, but daily work-sharing does not always take place.

**Birgit Nelsen-Salz**
Each LIFT project manager leads his project quite independently and single-handedly. However, every LIFT project is sponsored by a LIFT team member, who stays in contact with the project manager and reports proceedings at the monthly LIFT meetings. Moreover, the costs of each project are monitored on a monthly basis.

**Allison Haitz**
We are still in the early stages of executing projects. We need to strike the balance between utilizing internal expertise – which is hugely valuable and therefore in demand from many directions – and optimizing speed and flexibility to get innovation to market.

**Apart from R&D organizations, is LIFT attracting other employees' attention? Are you receiving regular input from colleagues who do not work in R&D or who are not even chemists or biologists?**

**Corinne Turpin**
Yes, we receive very valuable feedback from business colleagues (i.e. sales, business development, marketing, etc.). LIFT ideas are submitted from all sections of the Lonza organization and by people with very different backgrounds. We are very happy about these contributions; they help us develop a more differentiated view of the future.

**Allison Haitz**
Again, thinking about the broad life-science arena and the blurring of disciplines, these are incredibly valuable perspectives that we would like to encourage further. It's not just about Lonza's traditional science areas, it's about opportunities for innovation in the life- science business generally.

**And how does the collaboration with external parties, such as universities and research institutes, work?**

**Hans-Peter Meyer**
These are not much different from our usual university collaborations, where Lonza has ample experience, except that LIFT projects are geared towards the long term, which is an additional challenge with third parties. LIFT has made connections with academic institutions all over the world, which must now be translated into successful projects.

**Allison Haitz**
Collaboration with external parties is a key part of the LIFT model, and although it is in its early stages, as Hans-Peter says, we have a good track record for managing a great variety of highly successful collaborations at Lonza.

**Oleg Werbitzky**
In general, the collaboration works on the basis of specific projects; mostly, the initial ideas for these projects have been submitted by our academic partner. With regards to the collaboration model, we are extremely open: some of the projects are run 100 % externally; in other cases, the project is coordinated by an internal project manager; and in yet other cases, we have some of the experimental work performed externally, while other parts are performed at Lonza.

**How is the outcome from academic conferences and workshops implemented in daily work?**

**Hans-Peter Meyer**
Typically, as a new LIFT idea. But what must be improved is the compilation and use of all the information collected at events by different people from different organizations. Also, networking inside the company could be enhanced.

**Corinne Turpin**
The transition from theory to practice needs time and resources, which might be a constraint on "doing more".

**You are still in the process of gathering ideas, but are there any more concrete projects taking shape?**

**Oleg Werbitzky**
The first LIFT projects commenced in the fourth quarter of 2008, while in December 2008, the web-based LIFT portal went live on the Lonza intranet. Since then, we have had a regular flow of new ideas submitted by Lonza colleagues or by external partners. Each of these ideas goes through an evaluation process. Today, we have 7 LIFT projects running and roughly 10-15 additional LIFT ideas are at an advanced stage of development, with the potential to be up and running in 2010.

**Allison Haitz**
And there are several major fields of innovation where we are yet to implement projects as we are mapping where the best fit for Lonza will be – so there is good pipeline potential too.

**Ultimately, how will the definitive projects be chosen?**

**Birgit Nelsen-Salz**
There is a list of evaluation criteria such as business potential, probability of success (technical and economic), the intellectual property (IP) situation and so on. If the rating is positive on all points, and if the LIFT budget allows it, the project can begin.

**Allison Haitz**
And there will of course be some selection along the way, as projects cease if they do not meet expectations.

**Are there any ideas with game-changing or breakthrough potential?**

**Hans-Peter Meyer**
Theoretically, yes – but we have to wait for a time before we have any firm indications of groundbreaking potential.

**Oleg Werbitzky**
The selection process for LIFT projects is very stringent, so we expect a high breakthrough potential from all our projects, and for them to become game-changing in the end. All our projects have a long-term focus and come with considerable risks on the technical side, but also business-wise. It is impossible to predict the future and therefore very difficult to foresee clearly the probability of success or the business potential of an innovative idea. In order to be successful in this situation, it is very important to have a clear road map and closely follow the development of each single project, taking all important factors into consideration. All this needs excellent project and portfolio management processes, and a lot of business experience. With the support of the LIFT steering committee and the external and internal LIFT network, we have an excellent mix of scientific knowledge and business acumen. We are therefore very confident in our selection of the right projects and taking the right decisions during the realization of these projects within the LIFT program.

# Human Resources:
## *Our people make things happen!*

To provide our customers with the best service and products, it is essential to have a close link between our business activities and our employees. To support our company and our people in the best possible way, Lonza fosters an environment for systematic personal development. With a wide offering of training and development programs, we are working on continuous improvement of the skill set of our people. Talent management as well as succession planning are important pillars of our efforts to further improve the long-term competitiveness of Lonza as supplier as well as the employer of choice.

To recognize the needs and desires of our employees as early as possible, we run various programs:

- Our annual performance management program is an individual objective and development planning and evaluation system.
- Our regular employee survey "life@Lonza" gathers feedback and information from our colleagues about areas for improvement and strengths, on the organizational as well as the individual side.

The results help us to improve our working environment in a sustainable way, inside as well as outside the organization.

Participation in the annual performance management process is mandatory. The survey is voluntary, but the response rates are very high. And they have improved significantly in the last few years, from 73 % in 2007 to 85 % in 2009. The survey results showed that discussing one's career and development goals has a high priority in the annual performance review sessions between employee and supervisor.

Besides annual target-setting and performance review, our performance management is thus focused on two areas: Identifying the strengths and development needs of our employees, as well as discussing careers and development

goals. In performance review and feedback sessions, employees and line managers draft individual development plans in cooperation with and supported by Human Resources.

Since it is supporting our company's growth as well as the success of our employees, we put Development and Career Planning at the center of our efforts to retain our workforce.

These development plans feed into our talent management and succession planning pipelines, which allows us to promote a significant number of internal candidates to interesting and challenging new positions. In the following, you will find examples of the development of four Lonza colleagues, showing how we were able to contribute, with talent management and succession planning programs, to achieve two goals – filling positions with qualified internal candidates, and meeting the career development needs of individuals.

### René Goy

René Goy originally started as a Product Manager responsible for various Diketene Derivatives. In 2005, he became the Head of the Marketing & Sales Teams for Basic Chemicals, Diketene and HCN Derivatives.

After an outstanding performance in his role and successful participation in several talent development activities defined in the annual performance management sessions, he was promoted again in May 2009. In his new role as Business Team Leader Life Science Ingredients – Industrial Specialties, he is responsible for marketing and sales, as well as production for the above-mentioned product groups.

His experience from his former role in marketing and sales helps René to understand the requirements of our internal and external customers. René appreciates the variety of different functions in his new job.

"On the one hand, I am still active in the international market, selling products as a product manager. On the other, my new job also gives me a deeper insight into production, engineering and human resources matters, which is certainly great work enrichment for me." These new challenges enable him to understand certain things in a much clearer way and to look at topics from different angles. Also, strategic issues have become more important to him.

René developed his leadership and management skills on the job in his earlier positions, as well as through several internal training programs that were a useful preparation for his current job.

### Matthias Ritler

Matthias Ritler did his apprenticeship as a Chemical Operator at Lonza and has worked in several production facilities in Visp. After systematic performance reviews, it became clear that his strengths were in people management, and his interest in further developing himself in this area led to a promotion to shift leader.

Over the last three years, Matthias has worked as deputy shift team leader. For the time being, he is attending several internal courses to improve his leadership skills. His biggest challenge is to balance social and business needs that require a significant investment of dedication, energy and motivation. In his new position, Matthias manages the correlation between production planning and related decisions. This requires good priority management that can be quite dynamic in a multi-product facility. The contact with a great variety of people and characters has sharpened his people management skills. “This development also changed my values, my point of view on certain topics and my behavior,” Matthias says.

### Karen Fallen

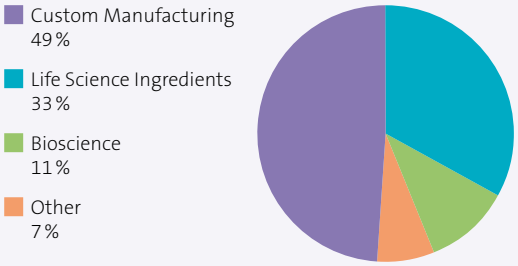
“Invaluable knowledge of our customers, our market and the value that we can bring to our customer projects,” Karen replies to the question how the experience she gained in her previous jobs is helping her in her new challenge. She is working as Head of Sales and Business Development and is responsible for the teams in Mammalian and Microbial Development Services within Custom Manufacturing and Media Services.

**We make it happen!**
Our high level of commitment, combined with low hierarchy, ensures on-the-job development as well as competitive benefits.

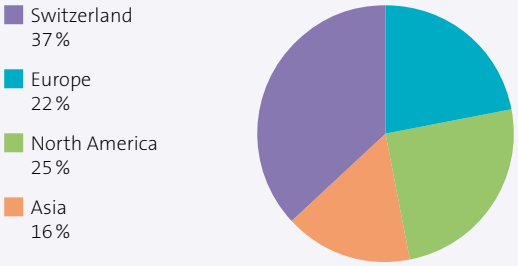
**We care about the next generation**
While we continue to build a high-performance culture, we focus on training, and invest in our people, encouraging them to advance their personal development and consider new job opportunities at Lonza.

Our challenging work environment at Lonza is fostered by strong leadership and empowers all employees in a self-driven environment. With strong commitment to the challenges of the organization, everyone can contribute with mutual respect and trust.

**Employees by division 2009**




**Employees by region 2009**




Before this position, Karen was working as Head of Mammalian Business Development and responsible for building the mammalian pipeline and helping the sales force to bring projects into the business unit.

Karen appreciates the close interaction with our customers, assisting them with their crucial portfolios to ensure they bring their products to market efficiently, as well as the close interaction with Lonza employees within her own and other business sectors.

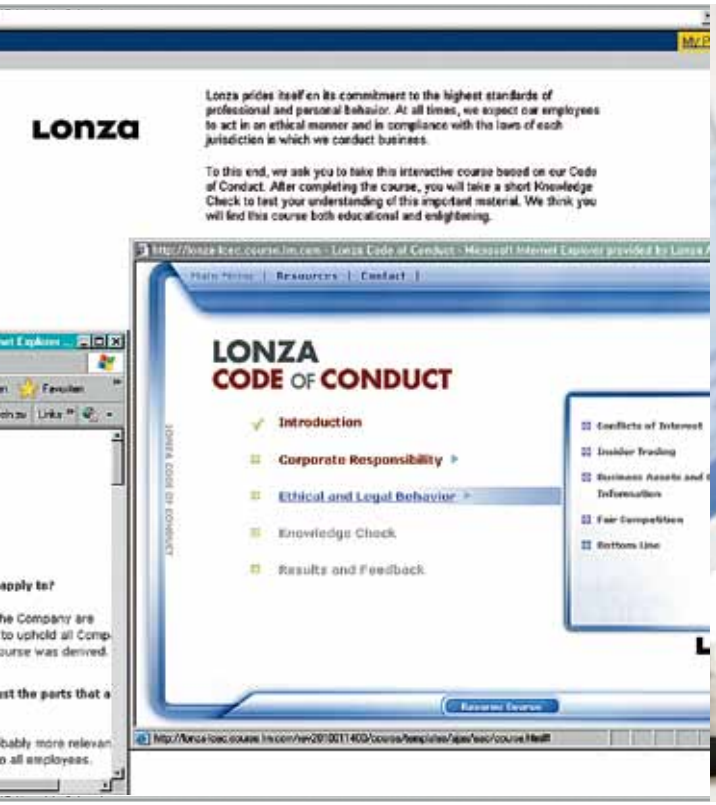
**Janet White**

Janet White started with Lonza in February 2007, joining the company with the acquisition of the Bioscience business from Cambrex. Some months later, Janet took over the position of Head of Corporate Communications.

In January 2009, she became Head of Sales & Marketing for the Lonza Custom Manufacturing business sector and was promoted in October 2009 to Head of the Development Services business unit.

Every new position has been a great opportunity for Janet to learn new things and to link her past experience with new challenges. “I’d like to think that every job has provided some experience or insight that is helpful to me now.” In the Development Services business unit, understanding and fulfilling customer needs as well as working with colleagues in many different parts of the world provides the opportunity to discover new ways to grow the business, in a challenging economic environment. This shows how we can profit from the experiences of our colleagues and how all Lonza employees can learn and grow with new challenges.

“It’s a dynamic business, with a lot of potential for new and improved services that help our customers improve the design and manufacturability of their drugs,” says Janet. The close link to the custom manufacturing parts of our businesses, the technical complexity and the fundamental support of better human health are important and interesting for her.




# A dual system to guard against corruption

In today's fast-paced, multi-faceted work environment, employees' familiarity with certain legal concepts is critical. To raise employees' awareness of anti-corruption laws, a complex legal minefield, Lonza has implemented a dual education system: an e-learning platform and in-person training.

In this ever-shrinking global community, businesses must be flexible and able to adapt quickly to meet the needs of a changing, competitive marketplace. This flexibility, however, must be counterbalanced by the rigidity and unforgiving nature of certain anti-corruption statutes such as the US Foreign Corrupt Practices Act (FCPA). The FCPA is a complex law that applies to the conduct of certain companies like Lonza and its employees, not only within the United States, but throughout the rest of the world. Violations of the FCPA have very serious consequences – fines that can exceed USD 2 000 000 and prison terms of up to five years.

Given these concerns, our challenge became clear: In a work environment where people are multitasking more than ever and have fully committed schedules, how could we equip Lonza's workforce with the necessary tools to simultaneously maintain our competitive advantage, while operating within the boundaries of complex laws such as the FCPA? Our solution was to provide clear, effective and efficient training to our employees, so that they could have the basic tools to identify and address a potential issue where it occurred.

When it became time to implement our solution, we turned to one of Lonza's values – enterprising. With this in mind, we focused on ways

that we could improve, innovate and add increasing value to our existing anti-corruption training programs. Although we previously provided training to employees on selected legal topics, we challenged ourselves to find a more enjoyable, effective, and efficient way to deliver this content. We decided that interactive training – both computer-based and live, in person – was the best way forward.

Following this, in 2006, Lonza launched an e-learning platform to provide its employees worldwide with training on various subjects, including, among others, the FCPA. To make the platform efficient and convenient for our employees, the courses are accessible online at any time during the program semester. After proceeding through a course module, the employee then tests his / her knowledge by taking a brief examination. Each course assigned must be passed. To pass the course, the employee must achieve a minimum score in the examination.

When we introduced this e-learning platform, we were mindful of the potential limitations that the program may have – namely, that online courses may not provide the desired impact, interest and retention of knowledge, and may not necessarily provide real-time feedback. We therefore decided to supplement this e-learning platform with enhanced, live, in-person training. As part of this program, legal department members travel to various locations to deliver substantive information and to engage in highly interactive, situational learning and role-playing. These methods allow us to actively engage our workforce and create memorable lessons and examples which can be easily recalled and applied if necessary. It also allows us to gather vital, real-time feedback.

In summary, the results obtained with these dual methods have been very positive. Regarding our e-learning platform, we are pleased to report that, to date, our pass rates have been extraordinarily high. With respect to in-person training, many of our employees have commented that not only was their training effective in communicating the intended message, but also rather enjoyable. Overall, employees that we have casually canvassed believe that, today, they have many more tools with which to effectively identify and address these serious potential anti-corruption issues in the event that they are encountered.

# Sustainability

Strengthening the present in order to secure the future, to the benefit and advantage of our customers – that sums up our approach: careful usage of natural resources, backed by comprehensive, far-sighted risk management in the area of safety, health and environmental protection (SHE).

Global implementation of the principles defined in Lonza's SHE policy is regulated and facilitated by binding standards and guidelines at all our sites across the world. Regular auditing of the results achieved helps to plan appropriate measures, correct anomalies, identify threats, and evaluate and minimize risks. This enables us to increase safety at work, protect employees' health, and largely eliminate unnecessary environmental impact, thereby contributing to continuous improvement.

Lonza commits substantial financial and human resources to these activities. In the reporting year, a total of 221 people, 2.6 % of our 8424 employees, worked directly in the SHE field. Capital expenditure on SHE was CHF 20 million, equivalent to 0.7 % of sales and 4 % of the Group's total investment in fixed assets. The operating expenses for SHE amounted to CHF 63 million, slightly higher than the previous year.

Global warming, water economy and climate change: In the discussion about sustainability, climate change plays a key role. It is closely linked to man-made emissions of carbon dioxide ($CO_2$), caused by burning fossil fuels, which are a contributory factor in global warming. The supply and consumption of energy are essential to industrial production, so Lonza, like other manufacturers, assigns a high priority to economical handling and efficient usage of energy resources. Overall energy consumption in 2009 amounted to 7800 terajoules (corresponds to a medium-sized town of about 80000 inhabitants), down 11.2 % on the previous year. Energy intensity measured against production volume increased by 3.3 %, a consequence of the increasing concentration on life-science products.

The plant in Visp (CH) signed a target agreement with the responsible national authorities about voluntary measures to reduce $CO_2$ emissions by 18 % (baseline: 2000) by 2012. Lonza AG in Visp has since invested over CHF 3 million, so far realizing a total of 11 measures, achieving energy savings of 150000 megawatt hours to date. The energy efficiency pro-

gram, Community of Practice in Energy (CoPE), was launched worldwide, with the objective of achieving a 10 % reduction in Group-wide energy costs by 2015. The CoPE coordinators have been designated and started their work in the reporting year.

At the Braine (BE) and Verviers (BE) locations, older cooling aggregates were replaced by new, more energy-efficient ones. At the Verviers plant, this also involves replacing the ozone-depleting R22 chlorofluorocarbon refrigerant.

In Slough (GB), an energy-management team has been deployed, with the target of reducing the carbon footprint by 20 %, compared with 2007, during the period from 2008 to 2010. Several measures have been introduced and partly realized.

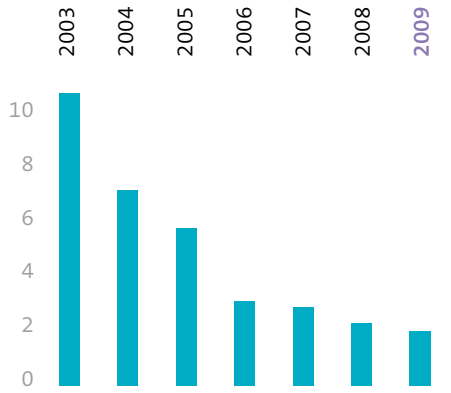
In Nansha (CN), the use of heat exchangers in the waste incineration plant enables energy to be recovered in the form of steam, replacing 450 metric tons of heating oil, which represents 13 % of the overall heating-oil requirements of the site.

The Lonza biotechnology site in Tuas (SG) has built a 2 000 $m^2$ photovoltaics array at a cost of SGD 1.8 million; this will replace 104 metric tons of $CO_2$ emissions. This project has earned the site the "Solar Pioneer Award" of the Economic Development Board and the "Greenmark Gold Award" of the Building Control Authority in Singapore, honors which recognize the Group's commitment to sustainable energy supply.

Lonza sites in the USA have made great progress with their implementation of the ChemStewards program, a comprehensive environmental, health and safety management system. This also provides for external verification of the site management systems and specifies the targets to be achieved on various indicators. The five sites – Williamsport, Portsmouth, Riverside, Mapleton and Cohasset – received their ChemStewards certification in 2009.

## Occupational accidents

per 1 000 000 hours worked (LTIFR)




The accident frequency rate in 2009 was 2.0 accidents per 1 million hours worked, 14 % down on the previous year. The 2010 target was met one year early. Strict adherence to existing safety guidelines, the corresponding training, and the incorporation of the issue in the personal goals of each co-worker are key to this success. Lonza aims to reduce accident frequency by a further 25 % to a rate of 1.5 by 2015.

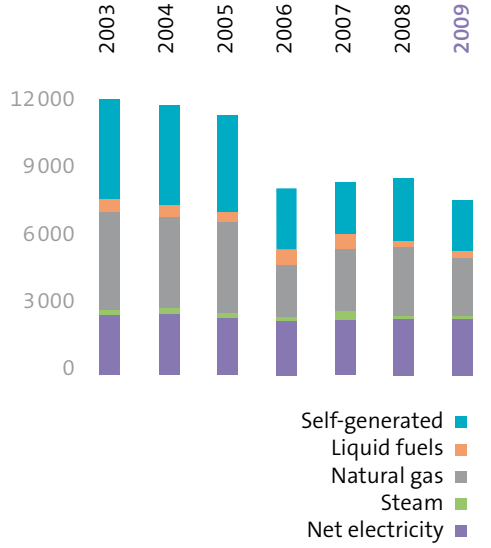
## Goals

| Safety | Basis 2000-2003 [1] | Status end 2006 [1] | Status end 2009 | Goal 2010 | Goal 2015 |
|---|---|---|---|---|---|
| **LTIFR** [2] Frequency of accidents (per 1 million hours worked) | 6.6 | 2.6 | 2.0 | **2.0** | **1.5** |
| **LTISR** [3] Severity of accidents (per 1 million hours worked) | 1 100 | 471 | 466 | **330** | **250** |

| Environment | Basis 2000 [1] | Status end 2006 [1] | Status end 2008 | Goal 2010 | Goal 2015 |
|---|---|---|---|---|---|
| **$CO_2$ emissions** [4] in 1 000 metric tons | 530 | 418 | 355 | **400** | **360** |
| **VOC emissions** [5] in metric tons | 520 | 576 | 537 | **300** | **270** |
| **Air impurities** [6] in metric tons | 1 050 | 1 180 | 975 | **900** | **810** |

## Energy

in terajoules

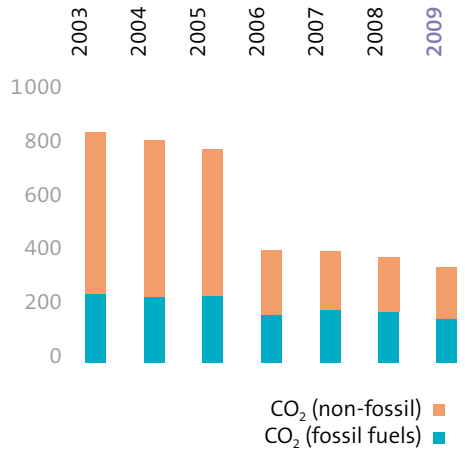



The total energy requirement in the year under review was 7 812 terajoules, 11.2 % down on the previous year. The main energy sources used by Lonza in 2009 were: natural gas (33 %), electricity (32 %) and utilization of waste (29 %). Liquid fossil fuels accounted for 4 % of the overall energy consumption. Renewable energy accounted for 15 % of the electrical energy consumed. Besides the economic development in the year under review, the energy-saving measures introduced contributed to the reduction of total energy consumption.

| Indicators 2009 [7] | | Change on 2008 |
|---|---|---|
| Energy intensity | 24.2 GJ / t | +3.3 % |
| Industrial water intensity | 14.9 $m^3$ / t | +19.5 % |
| $CO_2$ intensity | 1 098 kg / t | +5.2 % |
| Air impurity intensity | 3.02 kg / t | +3.2 % |
| Hazardous waste intensity | 254 kg / t | +6.8 % |

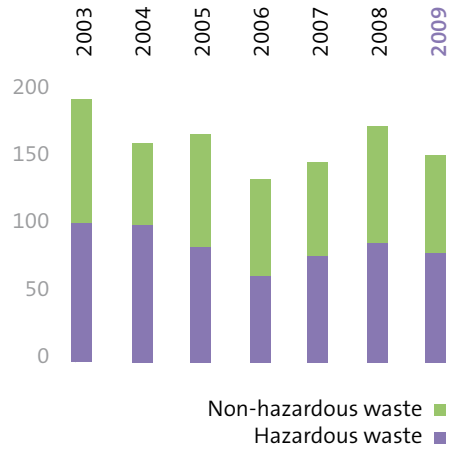
[1] Restated according to asset portfolio 2007 for reasons of comparability, i.e. excluding discontinued operations (Polymer Intermediates division and LOFO Hightech Film GmbH).
[2] Lost-time injury frequency rate: number of accidents per 1 million hours worked
[3] Lost-time injury severity rate: number of hours lost through accidents per 1 million hours worked
[4] Carbon dioxide (fossil- as well as non-fossil-based)
[5] Volatile organic compounds
[6] Air impurities comprise VOC, nitrogen oxides ($NO_x$), sulphur dioxide ($SO_2$) and particulate matter
[7] Intensity: Consumption of a resource or emission of a pollutant in relation to the production of one metric ton of finished goods.

## $CO_2$ emissions
in 1 000 metric tons



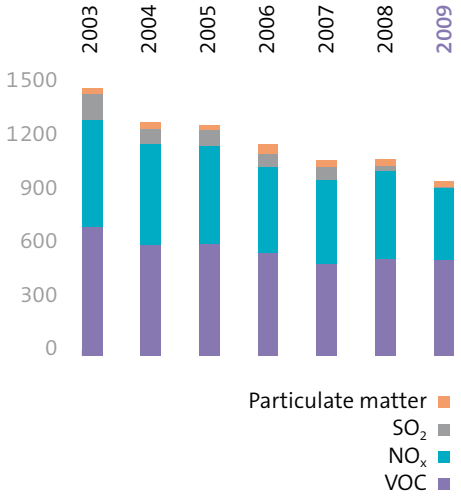

Total output of carbon dioxide in 2009 was 355 000 metric tons, 9.6 % down on the previous year (the fossil-based fraction decreased by 13.3 %). Besides the economic development in the reporting year, this success is due to the efficacy of the implemented energy-saving measures. $CO_2$ generated by the incineration of fossil fuels was 46 % of total $CO_2$ emissions in 2009. Carbon dioxide equivalents from other greenhouse gases amounted to 16.5 % of direct $CO_2$ emissions and are not reflected in the graph.

## Waste categories
in 1 000 metric tons



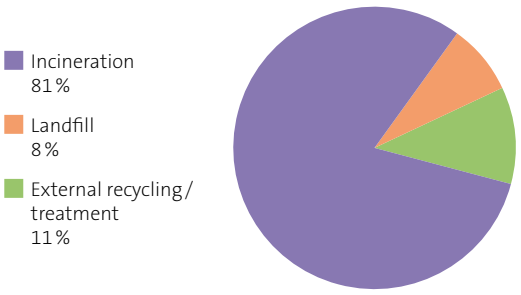

The total quantity of waste produced by Lonza in 2009 was 154 000 metric tons, of which 82 000 metric tons consisted of special (hazardous) wastes and 72 000 metric tons of non-hazardous wastes or inert materials. Lonza has a specialized waste disposal concept at all its sites, dedicated to the principle of avoidance, recycling and environmentally sound disposal. The categorization into special (hazardous) waste and non-hazardous waste conforms at all sites to the applicable national legislation.

## Air impurities
in metric tons




Volatile organic compounds (VOC) and nitrogen oxides ($NO_x$) are responsible for 96 % of all air impurities, totalling 975 metric tons in 2009, down 11 % on the previous year. While $NO_x$ are generated essentially by incineration processes, VOC emissions are the result of solvent use in production and cleaning processes. To achieve the set goals, Lonza concentrates on measures at the three main emitting sites, Visp, Braine and Liyang, representing 82 % of total VOC emissions. At 112 metric tons, halogenated VOC represent 21 % of total VOC output.

## Final destination of special waste 2009




In 2009, 92 % of hazardous waste materials were incinerated or externally recycled, and 8 % went to secured landfills. All the transportation, processing and final disposal companies involved are known to Lonza. Waste treatment is a matter of trust. The selection of the vendors is based on quality and SHE criteria as well as on economic factors. As a matter of principle, they are reputable firms which comply with all legal requirements.

# From industrial wasteland to business park

A business park is currently taking shape on a site where inorganic products such as calcium carbide, silicon carbide and corundum were once produced. Here too, Lonza is making an active contribution to climate protection, with two innovative projects in the field of renewable energy.

Remediation work at the former Lonza production site in Waldshut-Tiengen (Germany) began in 2005, successively transforming it into a modern business park. Some 30 enterprises and institutions, including a home improvement and garden center, metalworking and healthcare companies, consultants and car dealerships, have already located there, providing around 250 jobs in all. The renovated Lonza administration building now accommodates the local police department and the Waldshut-Tiengen customs services. One of the facilities offered to companies on the business park is a "heating with cold water" project. Groundwater from wells on the site is used as an energy source for a decentralized system of heat pumps.

When Lonza-Werke Elektrochemische Fabriken GmbH was first established in 1913, the availability of hydropower was a decisive factor in the choice of the site for Lonza's first production center on foreign soil. The rise of the steel and construction industries had an important influence on the development of the Lonza facility, which was specialized in the manufacture of inorganic products and fertilizers. However, from 1990 onwards, the company faced increasingly hard times due to the tightening of environmental requirements, rising production costs and mounting competition from Eastern Europe. In 1993, the plant had to close, with drastic consequences for the region's economy. Moreover, studies showed the need for remediation of residual pollution on the site and for sealing the old landfill in accordance with the latest environmental standards.

There was a long way to go from the closure of the production facilities to the rebirth of the location as a business park.

In 1996 / 97, the entire site was cleaned up, dust was removed and areas with residual mercury pollution were thoroughly decontaminated in a program costing approximately EUR 14 million. In 2002, the Waldshut authorities and Lonza agreed a development plan which provided for the deconstruction and redevelopment of the 560 000 $m^2$ site. Working in close collaboration with the environmental agencies of the Waldshut district authority and the regional administration in Freiburg, Lonza dismantled all the old structures and cleaned up residual subsoil contamination in accordance with the latest environmental standards, completing the remediation work by the end of 2009 at a total cost of EUR 15 million.

On the south slope of the former works landfill, which has now been replanted, Lonza has built a solar power station that produces energy for roughly 250 households. Special measures were needed to satisfy the official requirements for protection of the seal on the landfill. A total of 2880 highly efficient solar modules were mounted on a steel cable construction in order to minimize the number of anchor points on the sealed surface and make it easier to tend the planted area. The modules automatically track the sun's position through the day, increasing the power yield by about 20 % compared with a fixed, south-facing installation. The zero-carbon power produced by the photovoltaic plant will offset nearly 400 metric tons of fossil $CO_2$ from power production annually in Germany's overall electricity mix.

A further investment in low-$CO_2$ technology is the heating and cooling of buildings on the business park by means of heat pumps. Thermal energy is extracted from groundwater by decentralized heat pumps, cooling the water from about 10°C to 4°C. The extracted energy can be used to heat the buildings. After extraction of the energy, all the cooled water is fed through a dedicated pipe network into the Rhine. In summer, the same technology will make it possible to cool the buildings in a cost-effective and energy-efficient way. This will make it possible to reduce carbon emissions by 90 % compared with conventional heating and cooling technology. The "heating with cold water" project was classified as a model climate-protection project by the Environment Ministry in the German federal state of Baden-Württemberg.

These two sustainable projects in the area of renewable energy and the redevelopment of the former industrial site demonstrate Lonza's commitment to environmental responsibility. At the same time, the company has transformed its industrial legacy in the region into something of economic and social value, providing a site where diverse enterprises and institutions can create numerous new workplaces with strong roots in the region.

1

2

# Safely built plants that consider the environment

Safety and environmental standards are given top priority in Lonza engineering projects. Lonza's know-how in this area has been successfully implemented in a number of construction projects in China.

The decision to set up a production facility in China is predominantly market-driven. Competitive production costs, combined with lower investment and a fast time-to-market approach play a key role in any project site selection. However, fast realization of projects and low-cost investment are extremely challenging criteria, as they require full adherence to Lonza's corporate social responsibility and corporate safety, health and environment (SHE) standards, just the same as any other Lonza construction project. The pre-selection of contractors and a fair bidding process are very important parts of the process, while cost is definitely not the only evaluation parameter when selecting contractors. Equally important considerations are safety and quality aspects, underlined and documented in the relevant policies, with training records and visits to contractors' reference projects. In order to be in line with such requirements, very strong owner-driven construction supervision is needed. Coordinating these different trades properly is not only important from a safety point of view, it will inevitably speed up the installation process and bring down costs as well.

Involving future user team leaders as well as future maintenance people as early as the design stage, and gradually bringing in future operators as part of construction supervision, will ultimately provide all of them with a sense of ownership. Building a fully cGMP- and safety-compliant production plant requires thorough planning and carefully conducted construction work. Acceptable standards are quite often defined by model designs, making it much easier to overcome language problems and avoid misunderstandings.

3

1 Future user team leaders and maintenance people are already involved in construction projects in the design phase.
2 Compliance with building regulations and highest safety standards is essential for such projects.
3 Very strong owner-driven construction supervision is needed to cover areas like civil works, equipment installation, pipe-fitting, instrumentation and electrical installation.

Lonza's project for an active pharmaceutical ingredient production facility in Nansha received an award in 2008 for being the best-managed construction site in Guangdong Province.

Once the project is handed over to the operations team, the focus will be on SHE, product quality and production cost. Lonza has shown in previous projects in China that environmentally friendly processes and recovery of energy can contribute significantly to the reduction of production costs. Off-gas and waste liquid from production processes are treated in a thermal oxidizer with an integrated heat recovery system, where energy in the form of steam is generated and fed back into the production plant. For continuous operating processes, energy saving is even more efficient. In Lonza's niacinamide facility in Nansha, for instance, steam is used to heat up several distillation columns where energy from the reflux heat exchangers is recovered to feed a three-stage-vacuum product concentration. From there, the 70°C vapor is used to preheat air for the product-drying process. The same process handles off-gas in a very elegant way by transforming the organic contaminants in a catalytic oxidation step into high-pressure steam, which is continuously fed back into the production process. This process innovation, which reduced the specific energy requirement, has also been recognized by the Chinese government and has led to a "high technology" label for the plant.

Lonza's innovative process know-how led to a number of successfully delivered capital projects in China. With the formation of Lonza Engineering Ltd, such services are now offered to external customers too. In the area of environmental technology especially, Lonza Engineering Ltd has entered into cooperation and licensing agreements with some leading European companies.


The future lies
in our people

## Life Science Ingredients

« Because we think for tomorrow, apprenticeships, on-the-job training and continuing education play a critical role at Lonza in order to secure future expertise. As part of their apprenticeship as lab assistants with specialization in chemistry, Sebastian Lorenz (in the foreground) and Steven Wellig (in the background) learn how to handle the technical equipment in the education lab of our Visp (Switzerland) site. »

# A wide range of products for a variety of applications

**Life Science Ingredients is Lonza's oldest division, with some of its products dating back to the first decades of the 20th century. However, its history is marked by ongoing rejuvenation of the product offering through the addition of new products. Today, Life Science Ingredients consists of three business units – Nutrition Ingredients, Microbial Control and Performance Intermediates – and offers a wide range of products for applications in nutrition, hygiene, preservation, water treatment, materials protection, as well as in selected industrial markets.**

**Nutrition Ingredients'** main products are niacin and niacinamide (vitamin B3), L-carnitine products (Carnipure™ and Carniking™), FiberAid™ and ResistAid™ (larch arabinogalactan), Pro-K™ (vitamin K3) and advanced intermediates for the production of essential vitamins.

Carnipure™ is a special grade of L-carnitine manufactured for food and pharmaceutical applications, while Carniking™ is recommended for the manufacture of dry-feed formulations. These L-carnitine products, which are sold by the Life Science Ingredients division, are produced under contract by Lonza Custom Manufacturing at its site in Kouřim (Czech Republic). The key raw material for the product is manufactured at Lonza's multi-purpose plants in Visp (Switzerland).

Lonza is the leading producer of niacin and niacinamide, a vitamin B3, which is used in pharmaceuticals and added to a large number of foods. It is also used to enrich feedstuffs for production animals and pets, as well as in aquaculture. FiberAid™ and ResistAid™ are made from a natural soluble fiber which offers many significant benefits, the most important being in the areas of immune enhancement and digestive health. Pro-K™ is a fat-soluble vitamin essential for the blood-clotting process in animals.

The Nutrition Ingredients business unit also offers Meta™, a brand providing a solution for slug and snail problems in terms of efficacy and environmental profile. It is the most efficient molluscicide, working in all weather conditions.

The **Microbial Control** business unit provides solutions for healthy homes and workplaces. It is focused on four key areas: Hygiene and Preservation, Materials Protection, Water Treatment and Life Science Tools and Services (LSTS).

The hygiene and preservation offering includes active ingredients and formulated products for use in disinfectants and sanitizers for institutional and household cleaning and disinfection products. In the area of preservation, Lonza provides a wide range of preservative products and specialty additive technologies for applications such as skin care, hair care and sun protection. Lonza offers biocides and anticorrosives for recreational and industrial water treatment, paper application and oil-field applications, while the materials protection business provides chemical solutions to preserve and improve dimensional lumber, engineered wood products, plastic and other construction materials. Microbial Control's LSTS business provides microbial and analytical testing as well as regulatory support.

The **Performance Intermediates** business unit includes diketene and HCN derivatives as well as high-performance materials and agrochemical active substances.

HCN intermediates are used for the manufacture of agrochemicals, dyestuffs, optical brighteners, adhesives, cosmetics and pharmaceuticals, whereas diketene derivatives are utilized in vitamins, fragrances, agrochemicals, pigments and pharmaceuticals.

Lonza's high-performance materials are used in the electronics, aerospace and automotive industries. Pyromellitic dianhydride (PMDA) is applied in flexible electronic circuit boards, commonly found in mobile phones. The Primaset™ cyanate esters are the material of choice for highly demanding aerospace and electronic applications.

In the area of agrochemical intermediates and active substances, Lonza is concentrating on new, complex, advanced exclusive products.

# Results 2009

| Life Science Ingredients<br>million CHF | 2008 | 2009 |
|---|---|---|
| Sales | 1 196 | 1 038 |
| Change in % | | (13.2) |
| Change due to | | |
| Volume and prices | | (164) |
| Currency translation | | 6 |
| Scope of consolidation | | 0 |
| EBIT before special charges | 163 | 137 |
| Change in % | | (16.0) |
| Margin in % | 13.6 | 13.2 |
| Special charges [1] | 0 | (18) |
| Result from operating activities (EBIT) | 163 | 119 |
| Change in % | | (27.0) |
| Margin in % | 13.6 | 11.5 |
| EBITDA before special charges | 230 | 208 |
| Change in % | | (9.6) |
| Margin in % | 19.2 | 20 |
| EBITDA | 230 | 198 |
| Change in % | | (13.9) |
| Margin in % | 19.2 | 19.1 |

[1]

| | |
|---|---|
| – Impairment of assets | (8) |
| – Write-down of inventories | (1) |
| – Restructuring expenses | (2) |
| – Environmental expenses | (7) |
| **– Total special charges** | **(18)** |

**Divisional sales reached CHF 1 038 million, down 13.2 % compared with 2008. The decline was mainly volume-driven. EBIT (before special charges) decreased by 16.0 % to CHF 137 million, with a slightly reduced EBIT margin of 13.2 %, compared with 13.6 % in 2008. The division's margins were affected by the economic crisis, and specifically by the downturn in diketene derivatives and Carboquat™ and the de-stocking of vitamins and vitamin intermediates. Reduced sales volumes and currency fluctuations were offset by a stringent program of measures to reduce fixed costs. Key developments in 2009 include:**

- Below-target capacity utilization over the course of the year in almost all assets.
- The planned Visp plant shutdown in October 2009 (which takes place every two years).
- A slowdown in the Microbial Control business due to the weak US housing market and the global recession. The base business market contracted by 25 % in the USA and Europe. Through the development of new business, geographic expansion and improvements in the economy, the business began to recover in the fourth quarter of the year.
- Opening of the new formulation plant in Nanjing (CN) in the third quarter of 2009.
- Further growth in our R&D pipeline.

**Nutrition Ingredients** Demand for nicotinates (vitamin B3) for feed applications was significantly below 2008 levels due to a combination of reduced meat consumption, lower feed production and high inventories (in the first half of 2009). The global demand for feed-grade nicotinates increased substantially in the last quarter of 2009. Sales of food- and supplement-grade nicotinates grew in 2009, while pharmaceutical applications dropped because of tighter inventory policies.

Carnipure™ sales (food / pharmaceutical-grade L-carnitine) were strong due to new functional food launches. Carniking™ (feed grade L-carnitine) enjoyed stable demand, especially for pet food in the US market.

# Results 2009

Sales of Meta™ (metaldehyde), a specific molluscicide, were below expectations due to dry weather conditions and reduced slug activity in major European markets. In China, Meta-Li™, a liquid form of the product, went on sale for the first time. With several technical improvements, we have further enhanced the efficacy and environmental profile of Meta™.

Demand for ResistAid™ and FiberAid™ (larch arabinogalactan products) was slightly lower in 2009. However, positive results from scientific studies and end-consumer launches for immune support led to higher sales trends in the fourth quarter.

Sales of Pro-K™, Lonza's premium brand of vitamin K3 for feed applications, were at a low level in 2009, the second year of regular sales activity. The pilot scale plant for the vitamin K3 activities in Shawinigan (CA) will be shut down after having completed the full technical development of this new, proprietary, environmentally friendly technology. Lonza will evaluate further opportunities to provide its customers with chromium-free vitamin K3 from another site in the future.

**Microbial Control** Demand for hygiene products increased in the second half of 2009 as the economy began to show signs of recovery, institutional demand began to increase and sales for H1N1 flu applications began to materialize.

In the water-treatment business, stronger sales of patented technologies such as Equinox™ showed clear signs of recovery in the fourth quarter of 2009, as idled paper mills began to come back on line.

The industrial applications Carboquat™ and Acrawax™ were weak all year long.

The new formulation plant in Nanjing (CN) was opened in the third quarter of 2009. To date, one formulated product has received approval and four others have been submitted to the Chinese authorities for approval.

**Performance Intermediates** Demand for diketene and HCN derivatives was extremely weak in the first half of the year due to the general economic situation and de-stocking by our customers. Margins were under pressure because of high raw material prices in Europe compared with Asia and unfavorable exchange rates. Overall asset utilization recovered somewhat in the last quarter as demand increased.

The high-performance materials business was affected by a general slowdown in the electronics, aerospace and construction industries. Demand grew in the second half of 2009 due to the launch of a number of new specialty products and successful qualification with new customers.

Strong demand for agrochemical active ingredients and very high asset utilization in the non-regulated custom manufacturing plants delivered a good result. The strengthened product portfolio provides a basis for solid growth in the future.

# Sites

## Europe

### Visp, Switzerland

Employees: 3 061 (including employees in Custom Manufacturing)

For the Life Sciences Ingredients division, the Visp site produces a number of chemical intermediates and ingredients – including some of Lonza's most established products, dating back to the first decades of the 20th century – for a broad range of end-applications, including pharmaceuticals, vitamins, nutrition products, agrochemicals, dyestuffs, adhesives, as well as for the electronics, aerospace and automotive industries.

## North America

### Allendale NJ, USA

Employees: 160

In addition to its function as worldwide headquarters of Lonza's Microbial Control business unit, Allendale houses a major R&D center, with microbiology and analytical chemistry labs with activities that include formulation, process and product development for customers in the hygiene, preservation, water treatment and materials protection markets.

### Cohasset MN, USA

Employees: 16

The Cohasset plant produces larch arabinogalactan, an ingredient for food and dietary supplements in both human and animal nutrition, which can also be used in personal care products.

### Mapleton IL, USA

Employees: 76

The production plant in Mapleton specializes in chemical intermediate products for hygiene, water treatment and materials protection.

### Williamsport PA, USA

Employees: 144

The Williamsport plant offers chemical products for a wide range of applications, including water treatment, food additives, personal care products and household and industrial cleaners.

## Asia

### Guangzhou, China

Employees: 270

The Guangzhou production site accounts for a significant portion of the global demand for niacinamide (vitamin B3), a nutrient additive essential for human and animal growth.

### Liyang, China

Employees: 144

The Liyang site produces pyromellitic dianhydride (PMDA), a product predominantly used for heat-resistant polyimide resins, for example in the small, flexible electronic circuit boards commonly found in mobile phones.

### Nanjing, China

Employees: 46

The Microbial Control plant in Nanjing produces registered formulations for the hygiene, water treatment and materials protection industries.

The Performance Intermediates plant in Nanjing will produce pyromellitic dianhydride (PMDA), which is used in the production of flexible circuit boards, insulating films and as a hardener for polyester foams and epoxies.

### Nansha, China

Employees: 668 (including employees in Custom Manufacturing)

The Nansha plant is one of the biggest global suppliers of niacinamide (vitamin B3), which is mainly exported to European countries, the American continent, Japan and Australia, and is also supplied to the Chinese market.

Research and Development
Production Site
Sales Office

Life Science Ingredients
Custom Manufacturing
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1


2

# Microbial Control business expands in the Asian market

With the new facility in Nanjing (China), Lonza has significantly expanded its capacity and advanced its position in the microbial control formulations market. The design of the facility affords great flexibility to manufacture formulated products, using a wide range of active ingredients to meet customers' requirements.

In July 2009, Lonza opened a microbial control production plant, equipped with state-of-the-art technologies. The plant is located in Nanjing, an important chemical industry base in Eastern China.

Lonza Nanjing produces registered formulations for the hygiene, materials protection and water treatment industries. The products developed and registered by Lonza are some of the best products of their kind, effective against influenza (H1N1) and other human viruses. One of the Microbial Control business partners who recently visited the facility commented: "The design of the Lonza Nanjing plant fully complies with regulatory requirements. It has state-of-the-art facilities and we believe it will make a strong contribution to the microbial control market in Asia."

The research and development (R&D) center and quality lab at the Nanjing plant are designed to support the hygiene and preservation, materials protection and water treatment industries in Asia. In addition to transferring technologies from Lonza's strong portfolio of formulated products, the R&D team is also focused on developing unique formulations for the Asian market.

Mike Chiang, Manager of the R&D center in Nanjing stated: "Through the combined efforts of the R&D teams from Allendale, NJ (USA) and Lonza Nanjing, we have successfully developed three new products for wood preservation and a whitening agent for rubber wood. The new wood preservatives are


1 Samuel Xu and Katie Wu are seen carrying out a test in the Quality Control lab. Quality is of paramount importance for all our products.
2 Yuxian Zhang (left) and Wanqing Ding are preparing bottles containing formulated products to fill the machine line. Lonza's products improve the quality of life.
3 Mark Wang (left) and Ronghua Yi are adjusting the flowmeter of the deionized water. Process excellence is essential for the manufacture of high-quality products.

metal-free, environmentally friendly products, which offer our customers an advantage over some of the traditional technologies currently in use in the market."

To improve internal management and controlling, and to achieve operational excellence, the Systems Application and Products (SAP) system went live at the plant in June 2009. "We are proud that the current SAP system is functioning well," said Steven Wang, Senior Finance Manager of the Nanjing plant, "it is the core part of all business workflows in Nanjing and has been designed to be scalable as the business grows. In addition to SAP, we will launch two other tools – a Documental Management System (DMS) and a Lab Information Management System (LIMS) – which are expected to go live in 2010."

In addition to the microbial control plant, another plant for pyromellitic dianhydride (PMDA) production is under construction in Nanjing. Both plants will share the infrastructure at the site.

"We are happy to have completed this strategic expansion project for our Microbial Control business on time and on budget. With the new facility in Nanjing, we have significantly expanded our capacity and advanced our position in this critical market," commented Jeanne Thoma, Head of Lonza Microbial Control on the occasion of the Nanjing plant opening ceremony on 9 September 2009. "The design of our facility allows us great flexibility to manufacture formulated products, using a wide range of active ingredients to meet our customers' requirements."

Nanjing City is ideally suited to serve the Microbial Control customers in Eastern China and beyond. The plant fully complies with the Chinese Ministry of Health (MOH) regulations and is a US Environmental Protection Agency (EPA)-registered site. It is supported by microbiology, application and analytical labs, along with regulatory services which will enable the production of customer formulations, formulations from Lonza's portfolio of products as well as new formulations designed for specific customers and / or market needs. Lonza's expansive portfolio of registered formulations is marketed by over 1000 customers worldwide, including regional customers and leading multinationals. This, coupled with Lonza's extensive formulations expertise, ensures Lonza is capable of providing customers with offerings that meet the needs of the Asian market.

An eye for detail

# Custom Manufacturing

« Our employees work precisely and pay attention to details. In our research and development activities, precise work is of vital importance because it is directly linked to the development of our products. Here, Vanessa Wu, scientist at our R&D center in Nansha (China), is taking care of the mobile phase of an HPLC (high-performance liquid chromatography) process. »

# Strengthening customer products and pipelines for development and market success

For nearly 30 years, Lonza has been offering the life-science industry world-class, customer-focused contract manufacturing and development services for active pharmaceutical ingredients, biologics and functional foods. Today, customers include the leading pharmaceutical, biotechnology, bioresearch, nutrition and personal care businesses, along with hundreds of start-up, emerging and mid-size companies from around the world. The active ingredients we make are ultimately used by our customers in innovative medicines – treating patients with cardiovascular diseases, cancer, neurological and infectious diseases – as well as in food, feed, cosmetics and industrial applications.

As a premier contract manufacturing and development company, Lonza employs a broad yet flexible toolbox of capabilities and technologies to help innovative companies strengthen their pipelines, increase product quality, improve production processes, navigate the development and regulatory processes, lower their cost of goods, get to market faster and focus on their core competencies. We leverage five core manufacturing platforms – advanced chemical synthesis, peptides synthesis, microbial fermentation, mammalian cell culture and cell therapy.

Our **Chemical Manufacturing** business unit is a leader in the cGMP production and development of complex pharmaceutical ingredients, peptides, advanced chemical intermediates and starting materials. Using the industry's most advanced process know-how, strategic global sourcing, essential infrastructure and backward integration, we provide best-in-class manufacturing and lifecycle management services. We offer secure supply from our sites in Belgium, China, Switzerland and the USA.

The **Biological Manufacturing** business unit offers small- to large-scale bioproduction capabilities to companies worldwide. We are able to efficiently manufacture cells, therapeutic monoclonal antibodies, recombinant proteins, antibody fragments, vaccines and plasmid DNA, using mammalian cell culture, microbial fermentation, and cell therapy. From tech transfer and scale-up to full-scale manufacturing and purification, Lonza's highly qualified scientists and extensive know-how can turn a promising laboratory discovery into a viable marketed product. This businesses unit's production sites are located in the Czech Republic, Spain, Switzerland, the United Kingdom and the USA. In Singapore, a mammalian biopharmaceutical plant is currently in the process of construction and start-up and is expected to be operational in 2011.

The **Development Services** business unit provides lead optimization and preclinical as well as early-stage development services to help customers build stronger pipelines and improve individual drug candidates. Using advanced technologies such as the AggreSolve™ protein aggregation predictor, the Epibase™ immunogenicity prediction platform, and the Tripole™ protein engineering platform, the services group is able to identify drug efficacy or manufacturing challenges early on, which provides the opportunity to address them and create safer and more cost-effective biotherapies. Working closely with the customer to develop a flexible yet complete development package, we offer fast-track, high-quality cell line constructions, strain design, a range of analytical, purification, technology and process development services, as well as full regulatory support. These services are delivered from our sites in Switzerland, the United Kingdom, the USA and Singapore.

# Results 2009

| Custom Manufacturing<br>million CHF | 2008 | 2009 |
|---|---|---|
| Sales | 1 512 | 1 418 |
| Change in % | | (6.2) |
| Change due to | | |
| Volume and prices | | (98) |
| Currency translation | | 4 |
| Scope of consolidation | | 0 |
| EBIT before special charges | 279 | 239 |
| Change in % | | (14.3) |
| Margin in % | 18.5 | 16.9 |
| Special charges [1] | 0 | (112) |
| Result from operating activities (EBIT) | 279 | 127 |
| Change in % | | (54.5) |
| Margin in % | 18.5 | 9.0 |
| EBITDA before special charges | 436 | 420 |
| Change in % | | (3.7) |
| Margin in % | 28.8 | 29.6 |
| EBITDA | 436 | 379 |
| Change in % | | (13.1) |
| Margin in % | 28.8 | 26.7 |

[1]

| | |
|---|---|
| – Impairment of assets | (71) |
| – Write-down of inventories | (20) |
| – Restructuring expenses | (17) |
| – Environmental expenses | (4) |
| **– Total special charges** | **(112)** |

**Sales declined by 6.2 % to CHF 1 418 million, while EBIT (before special charges) declined by 14.3 % to CHF 239 million. This was mainly due to order reductions driven by clinical results, affecting a number of production campaigns in Biological Manufacturing in the second half of the year, which had a negative impact on our large-scale asset utilization in 2009.**

**Chemical Manufacturing** In 2009, customers' efforts to optimize their net working capital by changing to more just-in-time ordering had a negative impact on sales and net working capital.

The successful implementation of a number of operational excellence projects increased the flexibility and throughput of the majority of our assets, allowing Lonza to meet these new customer requirements and resulting in a stronger performance in the second half of 2009.

Lonza introduced the "Total Life-Cycle Management" concept, offering development and manufacturing services from early product development to the post-patent generic stage. This initiative further strengthened the product pipeline to more than 200 projects, and the capacity utilization was over 75 % during 2009.

Chemical Manufacturing continued to strengthen its capacity and technology platforms. All major projects are on schedule, driven by customer demand:

- The first two build-out phases of the large-scale, multi-purpose cGMP API (active pharmaceutical ingredients) plant in Nansha (CN) have been completed.
- The large-scale antibody drug conjugates project in Visp (CH) is on schedule.
- Five additional HAPI (highly potent active pharmaceutical ingredients) labs have been built and started up in Visp, adding handling capabilities for cytotoxic substances.
- Expansion plans for our new microreactor technology (mid-scale) are also under evaluation.
- The lab-scale peptide production in Nansha is now operational, with additional capacities under evaluation.

# Results 2009

Two FDA inspections, in Conshohocken (Riverside), PA (USA) and Braine-l'Alleud (BE), both had successful outcomes.

**Biological Manufacturing** Biological custom manufacturing operations continued to run at success rates above the industry average in 2009. Order reductions due to clinical trial issues affecting a number of production campaigns in the second half of the year had a negative impact on our large-scale asset utilization in 2009.

We increased our current pipeline to more than 200 active projects.

The business continued with the planned expansion projects, achieving a number of important milestones in 2009:

- The retrofitted multi-product facility in Porriño (ES) is now fully operational and currently supporting four customer projects.
- The new 5 000-liter line in Portsmouth, NH (USA), is on-line and running at full capacity, with a number of customer projects.
- The first plant in Singapore has been completed and handed over to Roche / Genentech. The full fit-out of the second facility in Singapore, with a scheduled start-up utilization of over 60 % in 2011, has been initiated and continues to be on track.
- Due to various customer-driven process and equipment changes, the start-up of the new 2 000-liter line in Hopkinton, MA (USA), has been delayed by four months. In addition, several project delays and schedule changes opened up a five-month window which enabled us to make necessary equipment and infrastructure changes to our fully booked 2 800-liter line in Hopkinton.

A number of customer audits and the four regulatory inspections conducted by the FDA in Hopkinton, MA (USA), Visp (CH), Portsmouth, NH (USA) and Slough (UK) all had successful outcomes.

Lonza and Teva have entered a cooperation on the development, manufacture and marketing of a number of affordable, efficacious and safe generic equivalents of a selected portfolio of biological pharmaceuticals. As in any other long-term partnership with our customers, Lonza will contribute cell line and process development and manufacturing services to this long-term partnership, offering both partners significant mid-term growth potential.

**Development Services** The AggreSolve™ technology, the highly potent cell lines (strategic collaboration with BioWa), and the new media and feed systems (Lonza Bioscience) met with strong customer interest.

With the acquisition of Algonomics NV, Gent (BE), Lonza further strengthened its protein design technology offerings with integrated immunogenicity prediction capabilities to support companies in the development of biotherapeutics.

An improved XS microbial expression platform and the new fast-track program for strain development and clinical material supply fortified Lonza's leading position in the microbial biopharmaceutical market.

# Sites

## Europe

### Braine-l'Alleud, Belgium

Employees: 349

Lonza Braine is a highly specialized custom manufacturing organization, providing process development services and cGMP manufacturing capacities based on chemical technologies for the production of therapeutic peptides.

### Kouřim, Czech Republic

Employees: 385

The Kouřim production site is focused on microbial fermentation and custom manufacturing services for the pharmaceutical, biotechnology and nutrition industries.

### Porriño, Spain

Employees: 280

After successful completion of a retrofit project to turn the facility into a multi-product mammalian biopharmaceutical plant, Lonza Biologics Porriño manufactures three different products for multinational customers. The plant has been authorized as a multi-product facility for commercial manufacturing, following a satisfactory inspection by the Spanish Agency AEMPS (Agencia Española de Medicamentos y Productos Sanitarios).

### Slough, United Kingdom

Employees: 492

The custom manufacturing site in Slough encompasses both extensive R&D laboratories, including a full range of analytical services, as well as small-scale cGMP production of mammalian biopharmaceuticals.

### Visp, Switzerland

Employees: 3 061 (including employees in Life Science Ingredients)

In the Custom Manufacturing division, the Visp site specializes in the production of microbial biopharmaceuticals, as well as in the production of regulated intermediates and active pharmaceutical ingredients (APIs), highly active pharmaceutical ingredients (HAPIs), antibody drug conjugates (ADCs) and peptides for pharmaceutical applications.

## North America

### Hopkinton MA, USA

Employees: 330

The microbial biopharmaceutical site in Hopkinton produces recombinant proteins and DNA therapeutics and vaccines for multiple indications such as cancer therapy and infectious diseases.

### Portsmouth NH, USA

Employees: 626

The production site in Portsmouth has significant expertise in the field of mammalian cell culture and cGMP custom manufacturing and is active in the large-scale production of biopharmaceuticals.

## Asia

### Nansha, China

Employees: 668 (including employees in Life Science Ingredients)

The Nansha site is active in R&D and cGMP manufacturing of active pharmaceutical ingredients on both small and commercial scale.

### Tuas, Singapore

Employees: 90

In recent years, Lonza has been constructing two mammalian biopharmaceutical facilities in Singapore. The first plant, established to produce Genentech's Avastin® (bevacizumab) bulk drug substance, was acquired as planned by Genentech Singapore Pte. Ltd at the end of August 2009. Lonza's second plant is in the process of construction and start-up. It is expected to be operational in 2011.

Research and Development
Production Site
Sales Office

Life Science Ingredients
Custom Manufacturing
Bioscience

Research and Development
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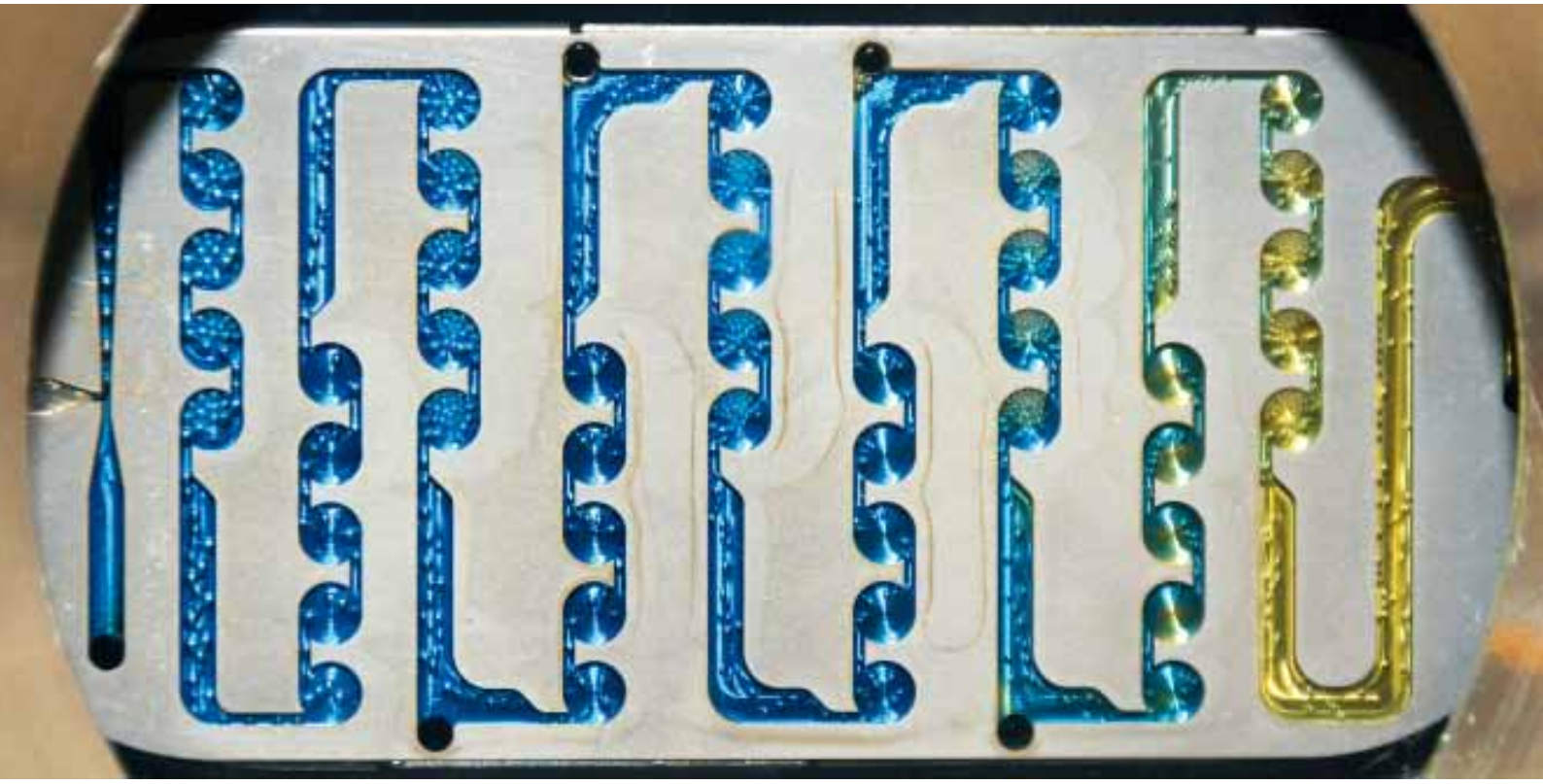


# Tiny channels for big impact

Microreactors can perform chemical reactions in tiny channels using continuous flow processes. The microreactor team at Lonza designs and tests microstructured devices in continuous-flow plants, performs lab studies of pharmaceutical reactions and successfully transfers them to commercial production.

Biology is a paradigm for many technical systems, since nature has generated many efficient, perfectly adapted systems, continuously improving them through evolution. Organisms use tiny channels to transport fluids to supply cells and limbs or to perform chemical reactions and separations. Microreactors constitute a similar system, where complex chemical reactions are performed in tiny, highly adapted channels for improved process conditions.

Microreactor technology is a new field in chemical engineering and organic synthesis that embodies the principles of Green Chemistry. In tiny channels smaller than a millimeter in diameter, chemical and biochemical transformations can be carried out that dramatically enhance mixing and heat transfer. The smaller internal volume also lowers the consumption of energy and raw materials, thereby increasing safety and economy. For several years, the microreactor team at Lonza has been designing and testing microstructured devices in continuous-flow plants, performing lab studies of pharmaceutical reactions, and successfully transferring them to commercial production. These reactions are usually hazardous, with unstable intermediates, but can be safely operated under intensified process conditions. The team's work has enabled the development of new industrial pharmaceutical processes with low energy and material consumption, which can also be used by the fine and specialty chemical industries.

With growing experience, the microreactor team developed an in-house modular microreactor system that was well received in the market. This is now


The microchannel on the left-hand side has a complex winding structure to enable rapid mixing and good heat transfer – here shown with a gas-liquid test reaction. Lonza's microreactors embrace a wide range of possibilities, with the Lab-Plate reactor on the right-hand side for lab research and reactor stacks in the middle for production scale. Lonza apprentices fabricate and characterize the complex microstructured devices: here, Carmen Studer in her third year of apprenticeship.

being directly promoted with the support of an experienced market partner. Most of the conventional parts of the Lonza system can be manufactured in Lonza's own workshops and delivered to our customers. The unique microstructured devices have been manufactured exclusively by external partners, specialized in precision milling and the bonding of stainless steel or other chemical-resistant alloys. More recently, Lonza's mechanical workshop has gained the capacity to fabricate its own tiny structures in stainless steel and other alloys.

To achieve optimal performance of the microreactors, engineers and chemists have to know exactly how the interplay between flow, mixing, heat transfer and chemical reaction works. The microreactor team therefore collaborates with several national and international universities where heat and mass transfer, test reactions, and simulated flow are studied. They are also investigating work-up steps and purification operations for integration into continuous-flow processes.

The modular concept of pumps, heat exchangers, mixers, reactors and sensors allows flexible and consistent set-up and scale-up from laboratory development to pilot plant production. The microreactor plant can also be integrated into conventional batch processes. In one such Lonza plant, a multi-ton campaign for a pharmaceutical intermediate was carried out in summer 2009. Regular customer feedback tells us that they highly value Lonza's consistent approach to scaling-up – from lab development to large production campaigns – where the application of microreactors is often indispensable. Customers value Lonza's flexible and elegant offering of both continuous and traditional batch manufacturing solutions that can accommodate a broad product portfolio.

Given the remarkable progress of microreactor innovation at Lonza, it came as no surprise when the Swiss Chemical Society (SCG) decided to award the prestigious Sandmeyer Prize 2010 to the microreactor team of Lonza Visp, for their groundbreaking work in this field. This team has emphatically demonstrated the entrepreneurial and innovative spirit at the core of Lonza's continuing competitiveness and strength.

High standards
for safe products

# Bioscience

« Setting and maintaining high standards is the core element of all our cell therapy contract manufacturing operations in order to provide our customers with safe, best-quality products, while meeting all safety, health, environment and quality requirements. Steve Clotter (left) and Jason Bishop (right), cell therapy technicians at our facility in Walkersville, MD (USA), are following the SOP (standard operating procedure) for the cytomate instrument. »

# Focusing on specific types of life-science customers

The Bioscience business is a leader in several high-value segments of the life-science industry, providing products and services to support the discovery and commercialization of human therapeutics. It supplies products and services worldwide to pharmaceutical and biotechnology companies, as well as academic and government institutions. The youngest Lonza division operates three business units: Therapeutic Cell Solutions, Testing Solutions and Research Solutions. Each of these business units focuses on a specific type of customer within the life-science market.

**Therapeutic Cell Solutions** includes cell therapy and media products. Cell therapy is a custom manufacturing service for this emerging therapeutic field. Cellular-based therapeutics are a relatively new and promising type of therapy, with practical applications in many disease categories. With twelve existing cGMP-certified cell therapy manufacturing suites in the USA and Europe, Lonza is uniquely positioned to support this type of therapy worldwide. Media can be used by researchers, and are also applied on a larger scale for the production of therapeutic agents by Biopharmaceutical customers. In addition, the Bioscience business provides media to Lonza Custom Manufacturing.

**Research Solutions'** products are used by customers performing research into potential new drugs and in other areas of life-science research. The product portfolio contains primary cells, media, bioassays, and gene expression products, high-end nucleic acid transfection systems and consumables, offered to academic institutions and pharmaceutical and biotechnology businesses.

Another area where a Bioscience product is used in other divisions is the **Testing Solutions** business unit. This group offers test systems for pharmaceutical and other customers in quality control laboratories – and also supplies Lonza's Quality Control laboratories throughout the world with test kits for safety testing of their drugs.

# Results 2009

| Bioscience<br>million CHF | 2008 | 2009 |
|---|---|---|
| Sales | 222 | 231 |
| Change in % | | 4.1 |
| Change due to | | |
| Volume and prices | | 11 |
| Currency translation | | (2) |
| Scope of consolidation | | 0 |
| EBIT before special charges | 19 | 26 |
| Change in % | | 36.8 |
| Margin in % | 8.6 | 11.3 |
| Special charges [1] | 0 | (8) |
| Result from operating activities (EBIT) | 19 | 18 |
| Change in % | | (5.3) |
| Margin in % | 8.6 | 7.8 |
| EBITDA before special charges | 33 | 43 |
| Change in % | | 30.3 |
| Margin in % | 14.9 | 18.6 |
| EBITDA | 33 | 39 |
| Change in % | | 18.2 |
| Margin in % | 14.9 | 16.9 |

[1]

| | |
|---|---|
| – Impairment of assets | (4) |
| – Write-down of inventories | (1) |
| – Restructuring expenses | (3) |
| – Environmental expenses | 0 |
| **– Total special charges** | **(8)** |

**Bioscience sales grew to CHF 231 million in 2009, despite difficult economic circumstances. Margins (before special charges) were higher than in 2008, but below expectations. Cost savings through business unit consolidation and global process optimization contributed strongly to increased profitability.**

**Therapeutic Cell Solutions** (formerly Cell Therapy and Media) sales grew compared with 2008, despite the postponement of a lead client's phase-3 trial. A regulatory update is expected from this client in the first half of 2010.

A cell therapy facility is under construction in Singapore. It will serve the needs of the global cell therapy market and clinical trials in the Asia-Pacific region in particular. The pipeline of Lonza cell therapy projects for clients continues to develop, with the execution of new manufacturing and service contracts for three significant new therapeutic clients. Synergies between biopharmaceutical manufacturing and media are gaining momentum, with strong performances from liquid media and the flexible-packaging product portfolio.

Large pharmaceutical and biotechnology companies are actively seeking deals which focus on regenerative medicine and pluripotent stem cell technologies. As pluripotent-derived stem cell therapeutics move through the clinical process, manufacture of these cell types will continue to gain traction.

# Results 2009

**Testing Solutions** (formerly Rapid Testing) sales grew compared with 2008 for all regions. Another key milestone was reached with the publication of the PyroGene™ product line in the US Pharmacopeia Forum.

Current economic pressures affecting the quality control and endotoxin testing market are expected to continue in 2010. Ongoing cost reduction pressure should increase demand for rapid testing systems in the long term. They improve manufacturing efficiencies and reduce labor cost.

**Research Solutions** (formerly Cell Discovery and Molecular Biology) revenue growth was in line with the market trend in 2009, with a strong performance from bioassays and protein analysis product portfolios. Transfection and chromatography sales were weak due to budget cutbacks on capital equipment and the postponement of lead clients' orders, respectively. This was offset by a decline in cost, which helped to secure targeted profit for 2009. Continued focus on innovation output led to a 40 % increase in projects over 2008, with numerous primary cell products and a new, low-cost transfection product launched.

# Sites

## Europe

### Cologne, Germany

**Employees: 93**

The Cologne site develops and manufactures a comprehensive product portfolio of life-science research tools around cultured cells, including non-viral gene transfer products for primary cells and hard-to-transfect cell lines. These products, as well as related services, support scientists worldwide, enabling more efficient identification of new targets for pharmaceuticals and therapies.

### Copenhagen, Denmark

**Employees: 19**

The Copenhagen site specializes in custom manufacturing unique agaroses for chromatography, protein and nucleic acid separation, and serves as a sales office for Lonza Bioscience.

### Verviers, Belgium

**Employees: 124**

Lonza Verviers is a production and distribution site for custom and research media, with products for clinical cell therapy, molecular biology and endotoxin detection. Its warehouse and distribution facilities serve as a European sales channel for life-science products manufactured at other Lonza Bioscience sites.

## North America

### Rockland ME, USA

**Employees: 63**

The Rockland site manufactures over 500 finished products for academic and government institutions as well as biotech and pharmaceutical companies worldwide, and continues to develop custom and innovative products for life-science research and personal care markets.

### Walkersville MD, USA

**Employees: 585**

Lonza Walkersville is the headquarters of our Bioscience division and provides products and services, including cell culture and endotoxin detection products, to the biotechnology, clinical, pharmaceutical, and research communities.

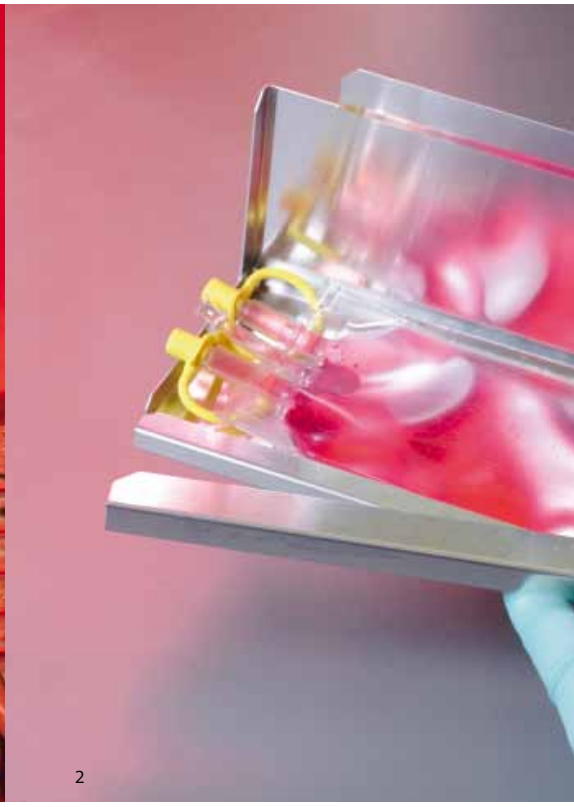
### Salisbury MD, USA

**Employees: 16**

Research and Development
Production Site
Sales Office

Life Science Ingredients
Custom Manufacturing
Bioscience

1



2

# Combined expertise to deliver higher value for customers

In order to leverage the synergies between the Custom Manufacturing and the Bioscience divisions, in-depth analysis of our core capabilities, offerings and services was conducted during 2009. This resulted in a number of cooperative programs, leading to beneficial service offerings for our customers.

The exchange of ideas and knowledge between Custom Manufacturing and Bioscience started early on, leading most notably to projects in support of the antibody drug conjugates (ADCs) business in Visp (Switzerland), as well as the mammalian biopharmaceuticals business in Slough (UK), both of which are part of the Custom Manufacturing division. Manufacturing ADCs represents a unique market opportunity for Lonza. This led to the construction of a dedicated plant in Visp for the production of ADCs.

To support the manufacture of ADCs, customized solutions are being sourced from the Bioscience site in Verviers (Belgium). The buffers are formulated with water for injection and Pharmacopoeia-grade raw materials. The products are shipped from Verviers to Visp in Lonza's fully validated proprietary Platinum UltraPAK™ 500-liter Bioprocess Containers, that themselves have passed the most stringent qualifications and validations in the industry. Using ready-to-use buffers from the Verviers site has enabled Lonza to react faster to customer needs and has avoided the additional capital expenditure that would have been required to develop this capability in Visp.

Lonza's site in Slough is continually improving the manufacturing process of proteins produced in CHO cells (CHO: Chinese Hamster Ovary) by using Lonza's proprietary GS Gene Expression System™. The R&D team in Slough has been able to more than double protein yields compared with just a few years ago, using a combination of process improvements, including optimized culture media and supplemental feeds pro-

1 Lonza manufactures and supplies culture media for a wide range of research and therapeutic applications.
2 A cell therapy product is inserted into a metal storage cassette prior to cryopreservation and delivery to the clinic.
3 Manufacturing antibody drug conjugates (ADCs) represents a unique market opportunity for Lonza. This led to the construction of a dedicated plant in Visp (Switzerland) for the production of ADCs.

vided by Lonza Bioscience. The Verviers facility has made GMP-grade powder qualification batches of the media and feeds in its non-animal origin powder facility. The material has been tested in Slough and will be used in the first GMP processes in the first quarter of 2010.

Lonza Bioscience's Bioservices business has also been successful in forging new collaborative ventures with the Custom Manufacturing division. Providing bioassay design, validation, and performance services, as well as producing novel animal-origin products, the Bioservices group offers Lonza's custom manufacturing clients a number of additional capabilities.

For example, working on a project for Lonza's site in Slough, the Bioservices group is creating novel polyclonal antibody tools to help determine the effectiveness of the purification method used in the production of biomolecules. This product testing is required by regulatory agencies to ascertain the effective removal of contaminating bioprocessing components. In addition to supporting these service activities, the Bioservices group is working with the mammalian biopharmaceuticals business to manufacture this test as a kit that could be used by researchers across the world.

Lonza's support services managers met recently in Slough to start the development of new capabilities to offer to clients. This new level of cooperation will not only add value for our clients by maintaining control of these processes, but will also bring new expertise to Lonza.

Two of Lonza's important clients are already taking advantage of this expanded service capability. One has a biotherapeutic product in a phase-1 clinical trial and is having the product manufactured in Lonza's Hopkinton, MA (USA) facility. As part of the client's process, the Bioservices group is performing release tests to guarantee the product's quality and safety in the market.

And in Visp as part of our ADC program, Bioservices is developing, qualifying and running lot-release testing for this important new class of therapeutics. It is expected that this activity will lead to new products being launched to support drug development efforts worldwide.

Taken together, these activities amount to significant cost savings for Lonza globally, and bring together the talents of many of Lonza's associates to help deliver higher value to our clients.


Good teams for
best customer service

## LONZA WORLDWIDE



« Great commitment and good team spirit – as expressed here by employees at our Nansha (China) site, returning to work after lunch at the company's canteen – are characteristic of our people's behavior and ensure the best possible service for our customers. »


## North America

USA

1 Lonza Inc.
Allendale

2 Lonza Inc.
Cohasset

3 Lonza Biologics Inc.
Hopkinton

4 Lonza Inc.
Mapleton

5 Lonza Biologics Inc.
Portsmouth

6 Lonza Rockland, Inc.
Rockland

7 Lonza Walkersville, Inc.
Walkersville

8 Lonza Inc.
Williamsport

## South America

Brazil

9 Lonza São Paulo
São Paulo

## Europe

Belgium

10 Lonza Braine SA
Braine-l'Alleud

11 Lonza Verviers Sprl
Verviers

Czech Republic

12 Lonza Biotec sro
Kouřim

Denmark

13 Lonza Copenhagen ApS
Vallensbaek Strand

France

14 Lonza France Sàrl
Levallois-Perret Cedex

15 Lonza Saint Beauzire SAS
Saint-Beauzire

Germany

16 Lonza Cologne AG
Köln

Hungary

17 Lonza Ltd Representation Office
Budapest

Italy

18 Lonza Milano S.r.l.
Treviglio

Poland

19 Lonza Ltd Representation Office
Warsaw

Russia

20 OOO Lonza Rus
Moscow

Switzerland

21 **Lonza Group Ltd**
**Global headquarters, Basel**

21 Lonza Sales Ltd
Basel

21 Lonza Ltd
Basel

22 Lonza Ltd
Visp

22 Lonza BioPharma Ltd
Visp

Spain

23 Lonza Ibérica S.A.U.
Barcelona

24 Lonza Biologics Porriño, S.L.
Porriño

The Netherlands

25 Lonza Benelux BV
Breda

United Kingdom

26 Lonza Biologics plc
Slough

27 Lonza Biologics plc
Tewkesbury

28 Lonza Biologics plc
Cambridge

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29 Lonza Guangzhou Ltd
Guangzhou

30 Lonza Guangzhou Nansha Ltd
Guangzhou

30 Lonza Guangzhou Research and
Development Center Ltd
Guangzhou

31 Lonza Liyang Chemical Co Ltd
Liyang

32 Lonza Nanjing Ltd
Nanjing

India

33 Lonza India Private Limited
Mumbai

34 Lonza India Private Limited
Bangalore

Japan

35 Lonza Japan Ltd
Tokyo

Singapore

36 Lonza Microbial Control Asia
Pacific Pte Ltd
Singapore

37 Lonza BioSciences Singapore Pte Ltd
Singapore

38 Lonza Biologics Tuas Pte Ltd
Singapore

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## Anticipated key reporting dates

Annual General Meeting for the 2009 financial year
31 March 2010, 10.30 am
Congress Center Basel
MCH Swiss Exhibition (Basel) Ltd

Half-year Report 2010
22 July 2010

Full-year Report 2010
26 January 2011

Annual General Meeting for the 2010 financial year
12 April 2011
Congress Center Basel
MCH Swiss Exhibition (Basel) Ltd

Dividend transfer to banks
As a rule, Lonza Group Ltd pays the dividend to its shareholders on the sixth business day following the Annual General Meeting.

## Listing and security information

Stock exchange listing / trading
SIX Swiss Exchange

Common stock symbols
Bloomberg LONN VX
Reuters LONZn.VX
Telekurs LONN

Security number
Valor 001384101
ISIN CH0013841017

## Forward-looking statements

Forward-looking statements contained herein are qualified in their entirety as there are certain factors that could cause results to differ materially from those anticipated. Investors are cautioned that all forward-looking statements involve risks and uncertainty. In addition to those discussed above, factors that could cause actual results to differ materially include: the timing and strength of new product offerings; pricing strategies of competitors; the company's ability to continue to receive adequate products from its vendors on acceptable terms, or at all, and to continue to obtain sufficient financing to meet its liquidity needs; and changes in the political, social and regulatory framework in which the company operates, or in economic or technological trends or conditions, including currency fluctuations, inflation and consumer confidence, on a global, regional or national basis.

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« As one of the world's leading suppliers to the pharmaceutical, healthcare and life-science industries, we set high standards for our products and services. This is also reflected in our daily work, where special emphasis is placed on proper technical procedures. Nathan Lee and Rebecca Maki (front cover, right and left), associates at our Hopkinton, MA (USA) facility, are shown here preparing to pack a chromatography column in a downstream process development lab. Properly packed chromatography columns enable the separation of proteins, serve as critical purification steps in the biotherapeutics manufacturing process and are essential to ensuring consistent, reproducible results. »